DOCUMENT RESUME

ED 324 763 EA 022 285

AUTHOR Nelson, F. Howard
TITLE Survey and Analysis of Salary Trends, 1990. Research Report.
INSTITUTION American Federation of Teachers, Washington, D.C.
PUB DATE Jul 90
NOTE 83p.; For a related document, see EA 022 284.
AVAILABLE FROM Publications, American Federation of Teachers, 555 New Jersey Avenue, N.W., Washington, DC 20001 ($10.00 prepaid).
PUB TYPE Reports - Research/Technical (143) -- Statistical Data (110)

EDRS PRICE MF01/PC04 Plus Postage.
DESCRIPTORS Comparative Analysis; *Contract Salaries; Elementary Secondary Education; Expenditure per Student; Inflation (Economics); National Surveys; Public Schools; *Salaries; *Salary Wage Differentials; *School Personnel; *Teacher Salaries; *Trend Analysis; Unions
IDENTIFIERS *American Federation of Teachers

ABSTRACT

While serving as the primary vehicle for reporting the results of the American Federation of Teachers (AFT) annual survey of state departments of education, this report also relies on several other data sources. Data include national average salaries or earnings for teachers, other school employees, government workers, and professional employees over the past 25 years. Beginning salaries for teachers and other college graduates over the past 15 years are reported. The AFT's survey of state departments of education also asked states to provide information on actual beginning salaries, experienced teachers reentering the classroom, and retirement rates. Comparisons with the various tables can be developed to suit the purposes of a particular local or state federation. The report is organized in four sections. The first section focuses on state comparisons; the second highlights trends in national averages; the third focuses on beginning teachers, with supplemental information on experienced teachers reentering the profession and teacher retirement; and the fourth presents an international comparison concerning public spending on education and some international teacher salary data. The text is accompanied by 21 figures, 22 tables, and 5 maps, and 2 appendixes provide education data by state for 1988-1989 and 1989-1990 and a list of data sources referenced by table. (MLF)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED324763

RESEARCH REPORT

SURVEY & ANALYSIS OF SALARY TRENDS 1990

PRODUCED BY
THE RESEARCH DEPARTMENT OF
THE AMERICAN FEDERATION OF TEACHERS

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

F. Howard Nelson

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

EA 022 285

RESEARCH REPORT

SURVEY & ANALYSIS OF SALARY TRENDS 1990

F. HOWARD NELSON

AMERICAN FEDERATION OF TEACHERS, AFL-CIO
555 NEW JERSEY AVE.
WASHINGTON, DC 20001

ALBERT SHANKER, President

ROBERT G. PORTER, Secretary-Treasurer

This survey has been prepared by
the Research Department of the
American Federation of Teachers, AFL-CIO

Jewell C. Gould, Director
F. Howard Nelson, Associate Director
Yvonne Bristol, Research Staff
Helen Nemorin, Research Staff

JULY, 1990

Survey and Analysis of Salary Trends, 1990

Foreword

This reference document supports state federations and locals in developing salary comparisons and formulating policy. While serving as the primary vehicle for reporting the results of the American Federation of Teachers annual survey of state departments of education, several other data sources are utilized, as noted in Appendix B. Data from the AFT's annual survey of local unions is available in a separate publication titled AFT Local Union Teacher Salary Survey 1990.

Data include national average salaries or earnings for teachers, other school employees, government workers and professional employees over the past 25 years. In many instances, these data are reported by state for recent years. Beginning salaries for teachers and other college graduates over the past 15 years are reported. The AFT's survey of state departments of education also asked states to provide information on actual beginning salaries, experienced teachers reentering the classroom, and retirement rates. For the most part, data from the survey of state departments of education are reported as received from the states. In some instances, data were confirmed by telephone. Qualifications to the data, if any, are noted in Appendix A and in the notes to some tables. Many states are still refining data, and any changes reported to the AFT Research Department will be incorporated into next year's report. Updated data relating to last year's report has been incorporated into this document.

Comparisons with the various tables can be developed to suit the purposes of a particular local or state federation, whether it is to consider trends, establish the position of members relative to similar professionals, or make meaningful and valid comparisons among states. The first section of this report focuses on state comparisons. The second section highlights trends in national averages. The third section focuses on beginning teachers, with supplemental information on experienced teachers reentering the profession and teacher retirement. The fourth section presents an international comparison to public spending on education and some international teacher salary data.

The Department of Research staff is grateful to the various locals, state agencies and state agency employees who provided the information and suggestions for this report. Yvonne Bristol of the Research Department staff helped prepare the manuscript and assisted in other aspects of this report. Helen Nemorin helped to collect data, edit the report and lay out the final manuscript. Hakimah Campbell and Karen Bridges entered data or helped with other aspects of the report.

Data used in this report and copies of the tables are available on microcomputer diskette and can be obtained by writing to the AFT Department of Research.

Highlights

State Comparisons

- The average teacher salary for 1989-90 of approximately $31,315 represents a 5.7 percent increase over the previous year's average salary of $29,636.

- Alaska had the highest average salary at $43,097, or 138 percent of the national average. South Dakota had the lowest average salary at $21,300, or just 68 percent of the national average.

- New Hampshire and North Carolina reported the highest average salary increase--8.5 percent--for 1989-90. Connecticut posted an 8.3 percent gain. Salaries rose 8.1 percent in Louisiana and 8.0 percent in New Jersey. No state reported an average salary decline, but in Alabama and Oklahoma salaries increased by less than two percent.

- New Hampshire and Connecticut reported average teacher salary increases of more than 20 percent over the past two years.

- Since the 1980-81 school year, the average teacher salary in Connecticut has improved by about 135 percent, and in Vermont and New Hampshire, average salaries improved by 115 percent. No other state had more than a 100 percent increase. The U.S. average increased only 78 percent.

- An adjustment for interstate differences in the cost of living shows that Michigan, California, Wisconsin, Minnesota, and Illinois pay teachers the most. A similar adjustment places North Dakota, West Virginia, Arkansas, Hawaii and South Dakota on the bottom. Adjusting for the cost of living, Michigan paid the average teacher $38,877 and South Dakota paid $23,902.

- Estimated expenditures per pupil in membership (from current funds) averaged $4,577 per pupil in 1989-90, ranging from a low of $2,454 in Utah to $7,586 in New Jersey, with New York, Connecticut and Alaska also spending more than $7,000 per pupil.

Trends Compared to Other Workers and Professions

- The 1989-90 average teacher salary of $31,315 is the highest ever average salary, but just $1,025 more than the $30,091 (in 1990 dollars) average teacher

salary recorded in 1972.

- In both 1956 and 1981, teacher salaries matched the mean annual earnings of the full-time worker in the U.S. economy, but teachers gained an 18 percent advantage by 1989--slightly above the 14 percent advantage they enjoyed in 1971.

- Teachers earned 12 percent more than the average government worker in both 1988 and 1989, about the same as the 11 percent advantage they enjoyed in 1962, 1968 and 1969.

- Teachers earned 89 percent as much as the full-time, year-round male worker in 1987--the smallest gap in 23 years.

- Teachers experienced decreased earnings compared to female full-time, year-round workers every year over the 1970's, but working women have gained less than teachers during the recent period of rising teacher salaries. The average teacher salary exceeds the average earnings figure of women in 1989 by 35 percent, the highest level since 1972.

- While salaries in other white-collar occupations remain high compared to teachers (ranging from 93 percent more for attorneys to 15 percent more for accountants), the earnings advantage of these white-collar occupations tends to be at the lowest level since the early 1980s and is lower than in 1962.

- In 1990, the salary growth of both full professors and assistant professors at public institutions outpaced the average salary increase of teachers. Both full and assistant professors made modest gains over teachers the past two or three years.

- Teacher salaries rose about the same as administrator salaries during the 1989-90 school year, and slightly faster than salaries for secretaries and teacher aides.

Beginning Teachers

- The average beginning teacher salary of $20,476 in 1989-90 rose 5.8 percent from the previous year compared to the average teacher salary increase of 5.7 percent.

- Eight states have starting salaries exceeding $22,000, and another six pay at least $21,000.

- Alaska, New York, Connecticut, and Hawaii have starting salaries in excess of $23,000, while only North Dakota, South Dakota and West Virginia report average starting salaries below $16,000.

- Beginning offers in business for new college graduates remained high compared to beginning teachers in spring 1990 (ranging from 48 percent more for engineers to 21 percent more for liberal arts graduates).

- For the second straight year, the earnings advantage of college graduates in sales/marketing, liberal arts or business administration increased over beginning teachers. Earnings increased at a slower rate in engineering, economics/finance, accounting, chemistry and computer science than they did for beginning teachers.

- Beginning teachers comprised approximately 3.6 percent of the classroom teacher work force in 1988-89 (39 states reporting data), and about 3.2 percent in 1989-90 (31 states reporting data).

- Based on data from 26 states, the number of experienced teachers reentering the classroom almost matched the number of beginning teachers in 1988-89 (3.3 percent) and 1989-90 (2.9 percent).

- The retirement rate (which includes non-teaching professional personnel in some states) averaged 2.2 percent for 28 states reporting data in 1987-88 and 2.3 percent in 1988-89.

Figure 1

AVERAGE TEACHER SALARY
1989-90

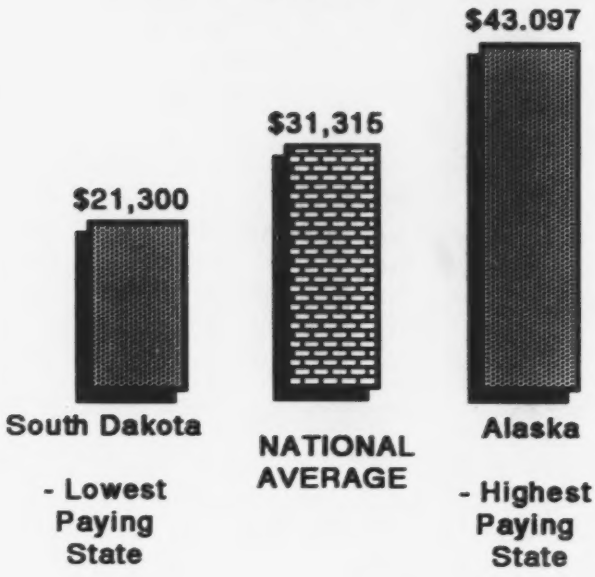


Figure 2

AVERAGE BEGINNING TEACHER SALARY
1989-90

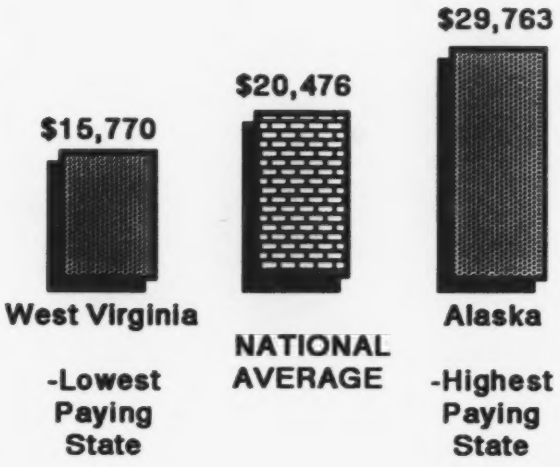


Figure 3

TEACHER SALARIES CONTINUE TO OUTPACE INFLATION BY SMALL AMOUNT

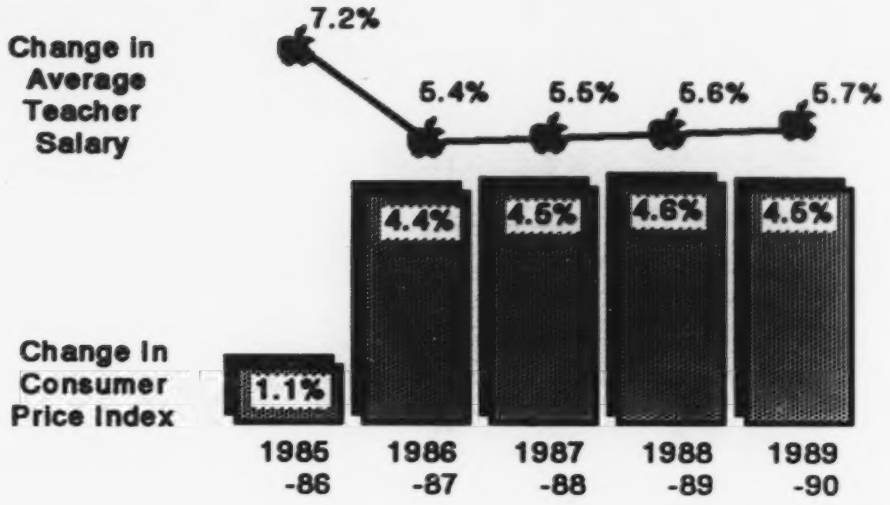


Figure 4

AVERAGE TEACHER SALARY EXCEEDS 1972 LEVELS BY ABOUT 1,000

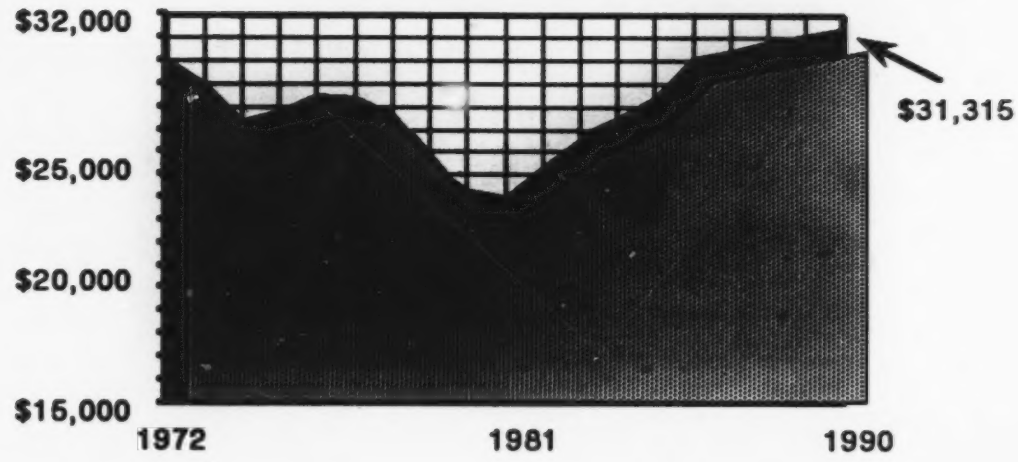


Figure 5

TEACHER SALARIES GREW AT A FASTER RATE
THAN SALARIES IN MANY OTHER PROFESSIONS IN 1989

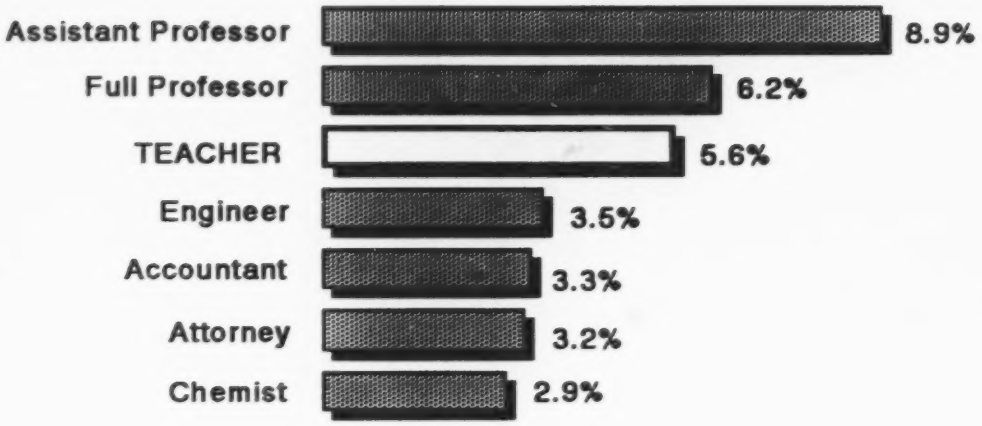


Figure 6

AVERAGE TEACHER SALARY IN 1988 FALLS FAR
SHORT OF EARNINGS IN OTHER PROFESSIONS - 1989

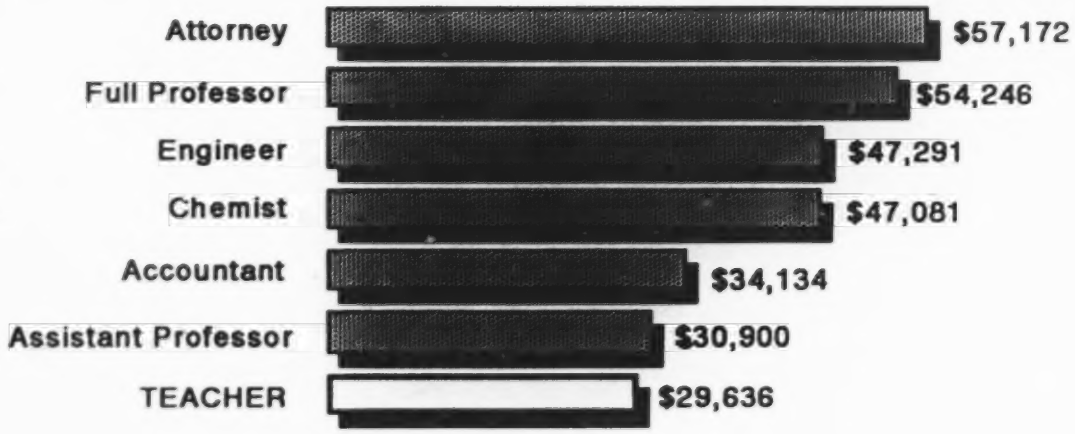


Figure 7

BEGINNING SALARY INCREASES IN MANY PROFESSIONS OUTPACE NEW TEACHER SALARY GAINS

PERCENTAGE GROWTH IN SALARIES --1990

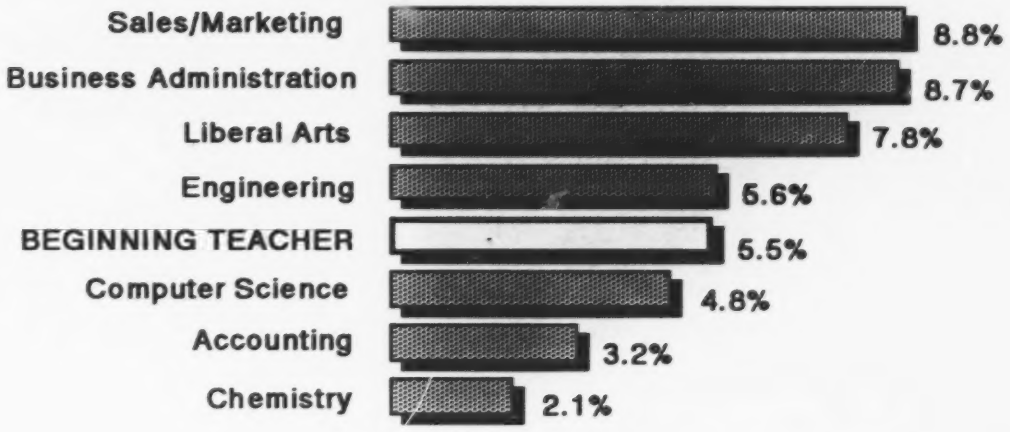
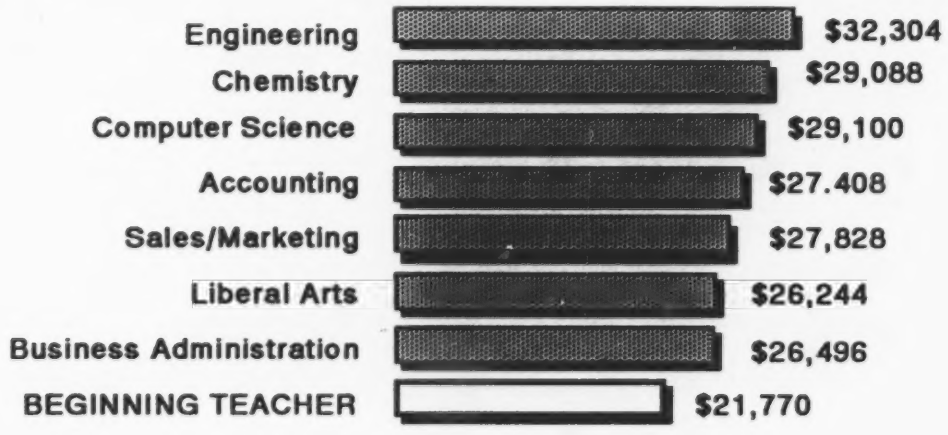


Figure 8

NEW TEACHER SALARIES LAG BEHIND BEGINNING SALARIES IN OTHER PROFESSIONS

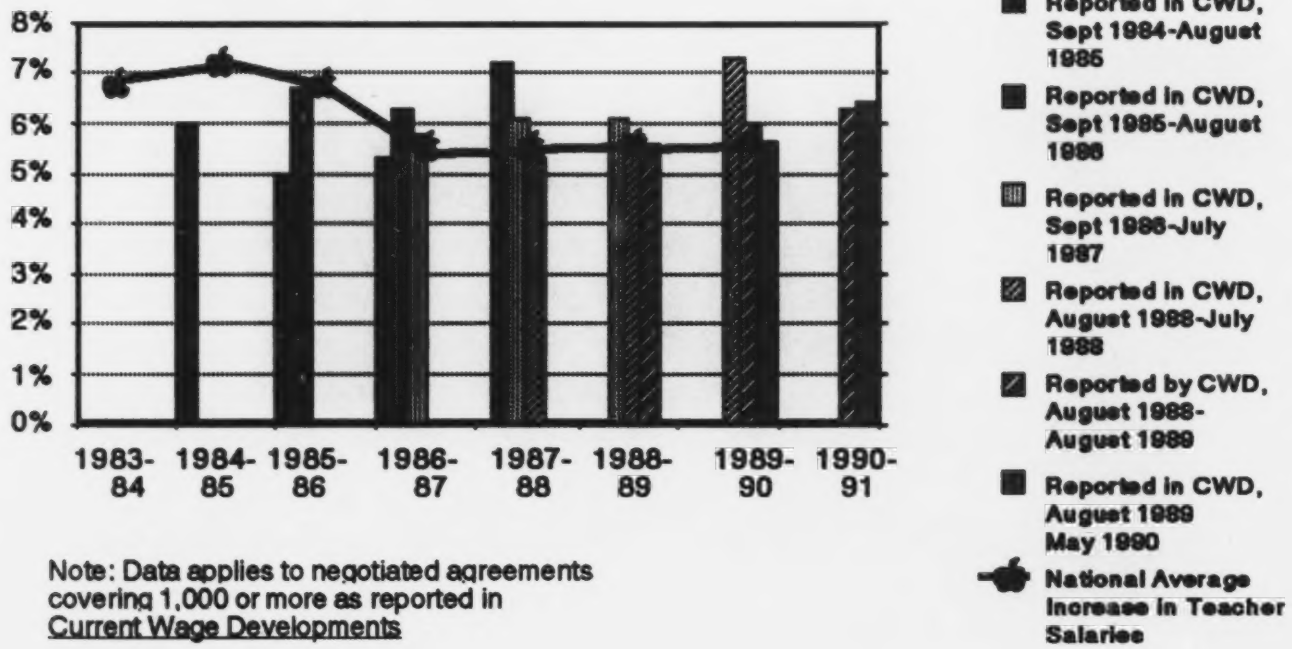
ESTIMATED ANNUAL SALARIES --1990



Note: Expected salary of spring 1990 graduates. Beginning teacher salary is based on an estimate 5.5 percent increase for the 1990-91 school year.

Figure 9

Average Annual Salary Adjustments for Teachers --Projections for 1989-90and 1990-91



Note: Data applies to negotiated agreements covering 1,000 or more as reported in Current Wage Developments

List of Tables

Table I-1 THE AVERAGE TEACHER SALARY IN 1989-90, STATE RANKINGS

Table I-2 TRENDS IN THE AVERAGE TEACHER SALARY, 1987-88 TO 1989-90

Table I-3 AVERAGE TEACHER SALARIES FOR 1980-81 AND 1989-90

Table I-4 AVERAGE SALARY OF TEACHERS IN 1989-90 COMPARED TO ANNUAL EARNINGS IN THE PRIVATE SECTOR, 1989

Table I-5 AVERAGE TEACHER SALARY 1989-90 COMPARED TO 1989 PER CAPITA PERSONAL INCOME

Table I-6 STATE RANKINGS BY 1989-90 AVERAGE TEACHER SALARY ADJUSTED BY THE 1989 AFT INTERSTATE COST-OF-LIVING INDEX

Table I-7 EXPENDITURES PER PUPIL (MEMBERSHIP) IN 1989-90 AND THE AVERAGE TEACHER SALARY IN 1989-90

Table I-8 TRENDS IN EXPENDITURE PER PUPIL, 1987-1988 TO 1989-90

Table I-9 EXPENDITURES PER PUPIL AND THE AVERAGE TEACHER SALARY IN 1989-90, RANKED BY AVERAGE SALARY WITHIN REGION

Table II-1 TRENDS IN TEACHER SALARIES COMPARED TO THE AVERAGE ANNUAL EARNINGS OF ALL WORKERS AND OF ALL GOVERNMENT WORKERS

Table II-2 TRENDS IN TEACHER SALARIES COMPARED TO THE AVERAGE ANNUAL MONEY INCOME OF MALE AND FEMALE INDIVIDUALS WORKING FULL-TIME

Table II-3 TRENDS IN TEACHER SALARIES COMPARED TO THE AVERAGE SALARIES OF SELECTED WHITE COLLAR OCCUPATIONS, (CURRENT DOLLARS, 1990 DOLLARS, RATIO TO TEACHER SALARIES AND ANNUAL PERCENT INCREASE)

Table II-4 SALARIES OR EARNINGS OF NONTEACHING SCHOOL PERSONNEL, 1975-76 TO 1989-90

Table III-1 ACTUAL AVERAGE BEGINNING BA TEACHER SALARIES, 1988-89 AND 1989-90

Table III-2 BEGINNING TEACHER SALARIES AND EXPECTED SALARIES OF COLLEGE GRADUATES TO BE HIRED (CURRENT DOLLARS, 1990 DOLLARS, RATIO TO BEGINNING TEACHERS SALARY AND ANNUAL PERCENT INCREASE)

Table III-3 NEW HIRES ENTERING TEACHING FOR THE FIRST TIME FOR STATES REPORTING DATA

Table III-4 EXPERIENCED TEACHERS REENTERING TEACHING FOR STATES REPORTING DATA

Table III-5 TEACHER RETIREMENT FOR STATES REPORTING DATA

Table IV-1 INTERNATIONAL COMPARISON OF PUBLIC EXPENDITURES FOR EDUCATION

Table IV-2 DEMOGRAPHIC AND SCHOOL STRUCTURE FACTORS INFLUENCING PUBLIC SPENDING ON EDUCATION

Table IV-3 TEACHER SALARIES IN SELECTED NATIONS

Table IV-4 PUBLIC SPENDING ON ADMINISTRATION AND NON-TEACHING PERSONNEL

List of Figures

Figure 1 AVERAGE TEACHER SALARY 1989-90

Figure 2 AVERAGE BEGINNING TEACHER SALARY 1989-90

Figure 3 TEACHER SALARIES CONTINUE TO OUTPACE INFLATION BY SMALL AMOUNT

Figure 4 AVERAGE TEACHER SALARY EXCEEDS 1972 LEVELS BY ABOUT $1,000

Figure 5 AVERAGE TEACHER SALARY GREW AT A FASTER RATE THAN SALARIES IN MANY OTHER PROFESSIONS IN 1989

Figure 6 AVERAGE TEACHER SALARY IN 1989 FALLS FAR SHORT OF EARNINGS IN OTHER OCCUPATIONS

Figure 7 BEGINNING SALARIES IN MANY OTHER PROFESSIONS OUTPACE NEW TEACHER SALARY GAINS

Figure 8 NEW TEACHER SALARIES LAG BEHIND SALARIES IN OTHER OCCUPATIONS

Figure 9 AVERAGE ANNUAL SALARY ADJUSTMENTS FOR TEACHERS--PROJECTIONS FOR 1990-91

Figure II-1 ANNUAL RATE OF INCREASE IN TEACHER SALARIES COMPARED TO THE CONSUMER PRICE INDEX

Figure II-2 TRENDS IN ANNUAL EARNINGS OF TEACHERS, GOVERNMENT WORKERS, AND ALL WORKERS

Figure II-3 THE AVERAGE TEACHER SALARY COMPARED TO THE AVERAGE EXPERIENCE LEVEL OF TEACHERS

Figure II-4 TRENDS IN ANNUAL EARNINGS OF TEACHERS CONTROLLING FOR WORK EXPERIENCE

Figure II-5 RATIO OF THE AVERAGE TEACHER SALARY TO THE ANNUAL MONEY INCOME OF MALE AND FEMALE FULL-TIME WORKERS

Figure II-6 TRENDS IN THE AVERAGE SALARIES OF TEACHERS AND

SELECTED WHITE-COLLAR OCCUPATIONS

Figure II-7 ANNUAL RATE OF INCREASE IN TEACHERS SALARIES AND SELECTED NONTEACHING POSITIONS COMPARED TO THE CONSUMER PRICE INDEX

Figure III-1 TRENDS IN BEGINNING SALARIES FOR COLLEGE GRADUATES IN SELECTED OCCUPATIONS

Figure III-2 TRENDS IN HIRING NEW TEACHERS, THE REENTRY OF EXPERIENCED TEACHERS, AND RETIREMENT

Figure IV-1 PUBLIC EXPENDITURES ON ELEMENTARY AND SECONDARY EDUCATION AS A PERCENTAGE OF GDP

Figure IV-2 RATIO OF PER STUDENT EXPENDITURE TO THE PER CAPITA GROSS DOMESTIC PRODUCT

Figure IV-3 RATIO OF ELEMENTARY AND SECONDARY TEACHERS SALARY TO THE PER CAPITA GROSS DOMESTIC PRODUCT

LIST OF MAPS

Map 1 AVERAGE TEACHER SALARY, 1989-90

Map 2 AVERAGE TEACHER SALARY INCREASE, 1980-81 TO 1989-90

Map 3 CURRENT EXPENDITURES PER PUPIL, 1989-90

Map 4 1989 AFT INTERSTATE COST-OF-LIVING INDEX

Map 5 1989-90 AVERAGE TEACHER SALARY RANKED WITHIN REGION

I. STATE COMPARISONS

Developments in Teacher Salaries, 1989-90. In 1989-90, the average public elementary and secondary school teacher in the United States earned a salary of approximately $31,315, an increase of 5.7 percent over the previous year. Not unexpectedly, Alaska had the highest average salary at $43,097 followed by Connecticut with $40,768. As shown in Table I-1, the District of Columbia, New York, and California all had average salaries over $37,000 -- about 20 to 30 percent above the national average. South Dakota ranked last with an average salary of $21,300. West Virginia and Arkansas also had average salaries below $23,000. Beginning teachers in eight states averaged more than $22,000 (See Table III-1).

No state experienced double-digit salary growth. New Hampshire and North Carolina reported the highest salary increase--8.5 percent for 1989-90 (see Table I-2). Connecticut, Louisiana and New Jersey posted gains above 8 percent. New Hampshire moved from the 36th to the 26th ranking over the three-year period. Mississippi rose from the 50th ranking to 43rd over the three-year period. No state experienced growth of less than 29%. Over the past two years, Connecticut, New Hampshire, Maryland, New Jersey, Vermont and Mississippi reported the greatest gains, ranging from 15 percent to nearly 21 percent. Over the past two years, average salaries increased less than 5 percent in Alaska and Utah.

Gains During the 1980's. Eight-year trends appear in Table I-3. The average salary grew by more than 115 percent in Connecticut, Vermont and New Hampshire compared to the national average of 78 percent. Average salaries improved less than 50 percent over the nine-year span in Washington (43 percent), Alaska (48 percent), Louisiana (46 percent) and Utah (40 percent).

Teacher Salaries Compared to the Average Annual Earnings of Private Sector Workers. States vary considerably among each other according to their economic condition and the cost of living. Table I-4 compares the average teacher salary to the average annual earnings of all workers, including part-time workers, in the private sector. The annual pay data apply to workers covered by State and Federal Unemployment Insurance programs and are compiled from reports submitted by employers for more than 93 million workers. Generally excluded from unemployment insurance are most agriculture workers on small farms, railroad workers, most domestic employees, student workers and the self-employed. This comparison serves only as an index to adjust for unique conditions within each state and to facilitate interstate comparisons. It is not presented as a standard by which to judge how much teachers should get paid relative to the average worker.

As measured by the ratio of the average teacher salary in 1989-90 to the estimated average annual earnings in the private sector in 1989, Rhode Island ranks first, with a ratio of 1.79 compared to the national average of 1.41. Several high-paying states, including New York, New Jersey, Michigan and the District of Columbia, fall to the middle. Thirty states have a ratio of between 1.35 and 1.50. While some states argue that they cannot pay teachers well because the taxpayers in the state do not get paid well, states with the lowest average teacher salaries tend to rank lowest when teacher salaries are compared to the average worker. North Dakota, Arkansas, Utah, Idaho, Oklahoma, Louisiana and West Virginia rank in the bottom ten on both measures. However, the state paying teachers the least, South Dakota, ranks 32nd according to the ratio. Mississippi improves from the 43rd ranking to 22nd.

The ranking according to the ratio of the average teacher salary to private sector employee earnings for 1981 is shown as the last column of Table I-4. The rankings of several states changed dramatically over the intervening six years. Massachusetts, New York, and Utah fell about 20 positions. Alaska, Connecticut, Vermont and Mississippi gained the most in the rankings.

Teacher Salaries Compared to Per Capita Personal Income. Table I-5 is constructed similarly to Table I-4, except that teacher salaries are compared to per capita personal income in the state. Personal income is a combination of earnings in the workplace, minus contributions for social insurance, plus dividends, interest, rent and transfer payments. Per capita income varies among states because of cost-of-living differences, differing concentrations of poor people and demographic factors (e.g., families are large in Utah, thus driving down per capita income). Again, the comparison to personal income is only an index designated to enhance interstate comparison, not a standard by which to judge how much teachers should be paid. Because 1989-90 average teacher salaries are compared to 1989 per capita personal income, the ratio of the two measures slightly overstates how much teachers earn relative to the per capita income.

The national average of the teacher salary to the per capita personal income ratio is 1.78, down from 1.80 in 1988-89, 1.83 in 1987-88 and 1.85 in 1986-87, but still above the ratio of 1.77 in 1981. A total of 25 states had a ratio of between 1.70 and 1.90. Mississippi, Michigan, Alaska, Rhode Island and Wyoming have ratios of 2.00 or better. These states cover every region of the country. Eight of the top ten states have above average teacher salaries. However, several high paying states--Connecticut, New Jersey, Massachusetts and Virginia--rank in the bottom ten.

Teacher Salaries Adjusted by the AFT Cost-of-Living Index. While the greatest variation in cost-of-living occurs within a state between rural and urban locations, a cost-of-living adjustment among states makes sense when states serve as the basis of comparing earnings. Cost-of-living variations among states are

considered in adjusting and re-ranking the average teacher salary displayed in Table I-6.

The interstate cost-of-living index was developed by the AFT Research Department using existing data on the cost of living in a majority of the nation's SMSA's to develop cost-of-living indices for each state. Using regression techniques, models for each of four regions were developed to explain differences in the cost-of-living between SMSA's. The regressions coefficients were then used as weights and combined with comparable state level data to establish the state cost-of-living index. The state cost of living index was normalized so that 1.00 represents the national average for all states weighted by their population. Details of the index and the methodology are available from the AFT Research Department. The index is also described in, "An Interstate Cost-of-Living Index," Educational Evaluation and Policy Analysis (winter, 1990). The AFT index is a revision of the index presented in the 1989 and 1988 versions of this report. The 1987 version of this report contained a similar cost-of-living index developed by Walter W. McMahon and Carrol Melton ("Measuring Cost of Living Variation," Industrial Relations, Vol. 17, No. 3, 1978 p. 331).

Michigan, California, Minnesota, Wisconsin, Illinois, Indiana and New York rank as the highest-paying states after adjusting for the cost of living. New York, Alaska, Maryland, Michigan and California, despite relatively high indices, still list in the top 10. High-paying Connecticut, Massachusetts, the District of Columbia and New Jersey drop substantially in the rankings. South Dakota, West Virginia, Arkansas, North Dakota, Idaho, Utah, Louisiana and Oklahoma remain at the bottom despite low cost-of-living. The rankings of most southern states improve modestly when the cost-of-living variation is accounted for.

Expenditures Per Pupil in 1989-90. During 1989-90, approximately $4,577 in current funds (a figure excluding capital outlay debt service and bond and construction expenses) were spent on each enrolled pupil (measured by October 1 membership or comparable figure) in the typical state. Expenditures per pupil rose by 6.7 percent over the 1988-89 estimate of $4,228, and 16.6 percent over the 1987-88 expenditure figure of $3,930, the final revised figure reported by the National Center for Educational Statistics. In contrast, the average teacher salary had a one-year gain of 5.7 percent and a two-year gain of 11.6 percent (Table I-2).

Most of the estimates in Table I-7 and Table I-8 are based on actual data reported by states but are adjusted to reflect the definition of expenditure per pupil in membership reported by the U.S. Department of Education. Frequently, early estimates of the National Center for Educational Statistics are used. In the prior version of this AFT report, the 1987-88 U.S. average expenditure per pupil was estimated to be $3,984 while the final revised expenditure reported by the U.S. Department of Education was $3,930. During the 1989-90 school year, New Jersey

overtook Alaska as the highest spending state. As shown in Table I-7, New Jersey spent an estimated 66 percent more than the national average, followed by Alaska, Connecticut, New York and the District of Columbia, each spending at least 40 percent more than the national average. Utah, Mississippi, Idaho, Alabama, and Kentucky spent under $3,000 per pupil. State rankings for per pupil expenditures and average teacher salary did not always match closely. California, for example, ranked 25th on expenditures per pupil, but the state has the 5th highest average teacher salary.

Regional Rankings. Perhaps the most common way to improve interstate comparisons is to make comparisons within the same region, as in Table I-9. Figured this way, Connecticut paid the most in New England; Washington D.C. topped the Mideast; Michigan paid the most in the Great Lakes area; and Missouri and Kansas were $5 apart among the six Plains states. Virginia topped the Southeast by $2,000; Arizona ranked highest in the Southwest; Colorado outpaced Wyoming by $2,000 in the Rocky Mountain region; and, excluding Alaska, California ranked highest in the Far West with a $7,000 advantage.

TABLE I–1

THE AVERAGE TEACHER SALARY IN 1989–90
STATE RANKINGS

Rank	State	Average Salary		Percent of U.S. Average
1	Alaska	$43,097		137.6%
2	Connecticut	40,768		130.2%
3	D.C.	39,850	b	127.3%
4	New York	38,925	c	124.3%
5	California	37,625	b	120.1%
6	Maryland	36,481	a	116.5%
7	Michigan	36,427		116.3%
8	Rhode Island	36,057	h	115.1%
9	New Jersey	35,676		113.9%
10	Massachusetts	34,175		109.1%
11	Pennsylvania	33,435		106.8%
12	Delaware	33,377		106.6%
13	Illinois	32,917	ae	105.1%
14	Wisconsin	32,600	b	104.1%
15	Hawaii	32,252		103.0%
16	Minnesota	32,190	a	102.8%
17	Indiana	30,978	a	98.9%
18	Virginia	30,926		98.8%
19	Oregon	30,842	g	98.5%
20	Colorado	30,758		98.2%
21	Nevada	30,587		97.7%
22	Ohio	30,567		97.6%
23	Washington	30,475	a	97.3%
24	Arizona	29,402		93.9%
25	Wyoming	28,991		92.6%
26	New Hampshire	28,986		92.6%
27	Vermont	28,849	a	92.1%
28	Florida	28,787		91.9%
29	Georgia	28,013		89.5%
30	North Carolina	27,814		88.8%
31	Texas	27,400	b	87.5%
32	Missouri	27,229		87.0%
33	Kansas	27,220	bf	86.9%
34	Tennessee	27,052		86.4%
35	Maine	26,881	e	85.8%
36	Iowa	26,747		85.4%
37	South Carolina	26,638		85.1%
38	Kentucky	26,275		83.9%
39	Nebraska	25,522		81.5%
40	Alabama	25,500		81.4%
41	New Mexico	25,302		80.8%
42	Montana	25,081		80.1%
43	Mississippi	24,365		77.8%
44	Louisiana	24,300		77.6%
45	Oklahoma	23,944		76.5%
46	Idaho	23,861		76.2%
47	Utah	23,652	a	75.5%
48	North Dakota	23,016		73.5%
49	West Virginia	22,842		72.9%
50	Arkansas	22,471	ad	71.8%
51	South Dakota	21,300		68.0%
	U.S. Average	$31,315		100.0%
	Guam	25,842		82.5%
	Virgin Islands	28,000		89.4%

a=estimate or preliminary; b=AFT estimate; c=median; d=excludes state-paid health insurance; e=includes extra duty and extracurricular pay; f=estimated to exclude fringes; g=includes 6% pension pick-up; h=based on total gross salary.

TABLE I–2

TRENDS IN THE AVERAGE SALARY, 1987–88 TO 1989–90

State	Average Salary 1987–88	Rank	Average Salary 1988–89	Rank	Average Salary 1989–90	Rank	Percent Change 1987–88 to 1988–89	Percent Change 1988–89 to 1989–90	Percent Change 1987–88 to 1989–90
Alaska	$41,190	1	$41,752	1	$43,097	1	1.4%	3.2%	4.6%
Connecticut	33,776	5	37,659	2	40,768	2	11.5%	8.3%	20.7%
D.C.	34,705	2	37,232	3	39,850	3	7.3%	7.0%	14.8%
New York	34,500	3	36,654	4	38,925	4	6.2%	6.2%	12.8%
California	33,159	6	35,495	5	37,625	5	7.0%	6.0%	13.5%
Maryland	30,933	8	34,159	7	36,481	6	10.4%	6.8%	17.9%
Michigan	34,080	4	34,128	8	36,427	7	0.1%	6.7%	6.9%
Rhode Island	32,858	7	34,233	6	36,057	8	4.2%	5.3%	9.7%
New Jersey	30,778	9	33,037	9	35,676	9	7.3%	8.0%	15.9%
Massachusetts	30,379	10	32,221	10	34,175	10	6.1%	6.1%	12.5%
Pennsylvania	29,177	15	31,248	12	33,435	11	7.1%	7.0%	14.6%
Delaware	29,573	13	31,585	11	33,377	12	6.8%	5.7%	12.9%
Illinois	29,667	12	31,148	13	32,917	13	5.0%	5.7%	11.0%
Wisconsin	29,206	14	31,046	14	32,600	14	6.3%	5.0%	11.6%
Hawaii	28,445	17	29,835	16	32,252	15	4.9%	8.1%	13.4%
Minnesota	29,900	11	30,661	15	32,190	16	2.5%	5.0%	7.7%
Indiana	27,028	25	29,330	19	30,978	17	8.5%	5.6%	14.6%
Virginia	27,193	23	28,976	22	30,926	18	6.6%	6.7%	13.7%
Oregon	28,060	19	29,387	18	30,842	19	4.7%	5.0%	9.9%
Colorado	28,651	16	29,557	17	30,758	20	3.2%	4.1%	7.4%
Nevada	27,599	21	28,836	23	30,587	21	4.5%	6.1%	10.8%
Ohio	27,606	20	29,171	21	30,567	22	5.7%	4.8%	10.7%
Washington	28,217	18	29,200	20	30,475	23	3.5%	4.4%	8.0%
Arizona	27,388	22	28,499	24	29,402	24	4.1%	3.2%	7.4%
Wyoming	27,141	24	28,400	25	28,991	25	4.6%	2.1%	6.8%
New Hampshire	24,019	36	26,703	29	28,986	26	11.2%	8.5%	20.7%
Vermont	24,507	33	27,106	26	28,849	27	10.6%	6.4%	17.7%
Florida	25,198	28	26,974	27	28,787	28	7.0%	6.7%	14.2%
Georgia	25,736	26	26,920	28	28,013	29	4.6%	4.1%	8.8%
North Carolina	24,900	29	25,646	34	27,814	30	3.0%	8.5%	11.7%
Texas	25,558	27	26,513	30	27,400	31	3.7%	3.3%	7.2%
Missouri	24,709	31	26,006	31	27,229	32	5.2%	4.7%	10.2%
Kansas	24,647	32	25,926	32	27,220	33	5.2%	5.0%	10.4%
Tennessee	23,785	38	25,619	35	27,052	34	7.7%	5.6%	13.7%
Maine	23,425	40	24,938	38	26,881	35	6.5%	7.8%	14.8%
Iowa	24,858	30	25,778	33	26,747	36	3.7%	3.8%	7.6%
South Carolina	24,403	34	25,185	37	26,638	37	3.2%	5.8%	9.2%
Kentucky	24,253	35	24,933	39	26,275	38	2.8%	5.4%	8.3%
Nebraska	22,683	43	23,841	42	25,522	39	5.1%	7.1%	12.5%
Alabama	23,320	41	25,190	36	25,500	40	8.0%	1.2%	9.3%
New Mexico	23,958	37	24,092	41	25,302	41	0.6%	5.0%	5.6%
Montana	23,774	39	24,421	40	25,081	42	2.7%	2.7%	5.5%
Mississippi	20,562	50	22,579	46	24,365	43	9.8%	7.9%	18.5%
Louisiana	21,209	48	22,469	47	24,300	44	5.9%	8.1%	14.6%
Oklahoma	22,773	42	23,521	43	23,944	45	3.3%	1.8%	5.1%
Idaho	22,242	45	22,732	45	23,861	46	2.2%	5.0%	7.3%
Utah	22,572	44	22,852	44	23,652	47	1.2%	3.5%	4.8%
North Dakota	21,660	47	22,249	48	23,016	48	2.7%	3.4%	6.3%
West Virginia	21,736	46	21,904	50	22,842	49	0.8%	4.3%	5.1%
Arkansas	21,133	49	21,955	49	22,471	50	3.9%	2.4%	6.3%
South Dakota	19,758	51	20,525	51	21,300	51	3.9%	3.8%	7.8%
U.S. AVERAGE	$28,071		$29,636		$31,325		5.6%	5.7%	11.6%
Guam			25,842		25,842			0.0%	
Virgin Islands	22,686		26,572		28,000		17.1%	5.4%	23.4% 7

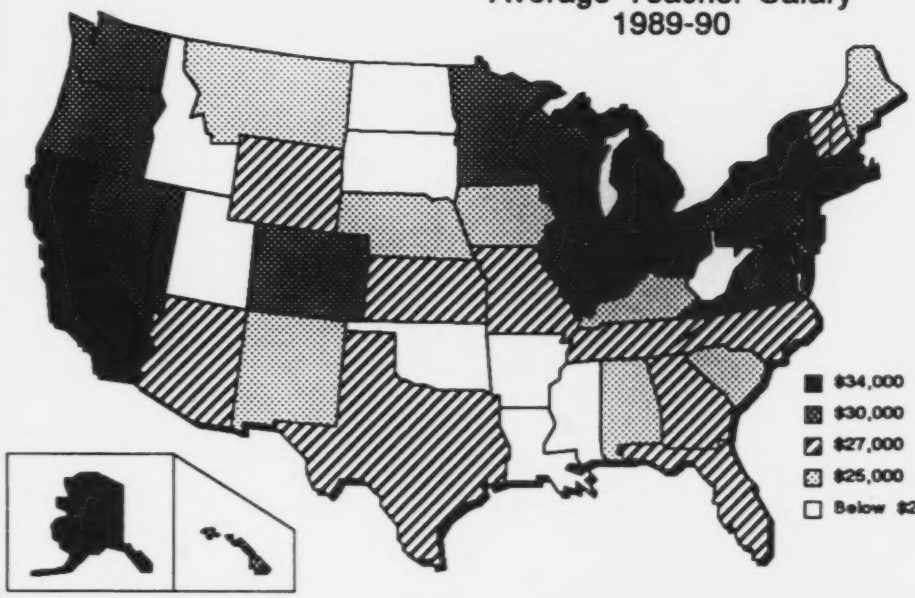
TABLE I–3

AVERAGE TEACHER SALARIES FOR 1980–81, AND 1989–90

State	--Average Salary-- 1980–81	1989–90	-----Rank----- 1980–81	1989–90	Percent of --U.S. Average-- 1980–81	1989–90	Change 1980–81 to 1989–90	Rank
Connecticut	$17,404	$40,768	21	2	99%	130%	134.2%	1
Vermont	13,006	28,849	51	27	74%	92%	121.8%	2
New Hampshire	13,412	28,986	48	26	76%	93%	116.1%	3
Virginia	15,535	30,926	33	18	89%	99%	99.1%	4
New Jersey	18,245	35,676	13	9	104%	114%	95.5%	5
Maine	13,994	26,881	45	35	80%	86%	92.1%	6
Maryland	18,998	36,481	10	6	108%	116%	92.0%	7
Mississippi	13,017	24,365	50	43	74%	78%	87.2%	8
Pennsylvania	17,890	33,435	17	11	102%	107%	86.9%	9
Florida	15,406	28,787	36	28	88%	92%	86.9%	10
South Carolina	14,353	26,638	44	37	82%	85%	85.6%	11
Wisconsin	17,607	32,600	20	14	100%	104%	85.2%	12
Delaware	18,205	33,377	14	12	104%	107%	83.3%	13
Massachusetts	18,703	34,175	12	10	107%	109%	82.7%	14
New York	21,326	38,925	3	4	122%	124%	82.5%	15
Rhode Island	19,803	36,057	8	8	113%	115%	82.1%	16
California	20,729	37,625	7	5	118%	120%	81.5%	17
Georgia	15,445	28,013	34	29	88%	89%	81.4%	18
Minnesota	17,777	32,190	18	16	101%	103%	81.1%	19
Ohio	16,904	30,567	24	22	96%	98%	80.8%	20
Indiana	17,255	30,978	22	17	98%	99%	79.5%	21
Tennessee	15,118	27,052	39	34	86%	86%	78.9%	22
Kansas	15,250	27,220	37	33	87%	87%	78.5%	23
Missouri	15,421	27,229	35	32	88%	87%	76.6%	24
North Carolina	15,858	27,814	30	30	90%	89%	75.4%	25
Texas	15,728	27,400	32	31	90%	87%	74.2%	26
D.C.	22,882	39,850	2	3	130%	127%	74.2%	27
Nevada	17,700	30,587	19	21	101%	98%	72.8%	28
Michigan	21,213	36,427	5	7	121%	116%	71.7%	29
Colorado	17,917	30,758	16	20	102%	98%	71.7%	30
Nebraska	14,882	25,522	42	39	85%	82%	71.5%	31
Arizona	17,201	29,402	23	24	98%	94%	70.9%	32
Oregon	18,047	30,842	15	19	103%	98%	70.9%	33
Illinois	19,425	32,917	9	13	111%	105%	69.5%	34
Arkansas	13,273	22,471	49	50	76%	72%	69.3%	35
Alabama	15,205	25,500	38	40	87%	81%	67.7%	36
Kentucky	15,750	26,275	31	38	90%	84%	66.8%	37
North Dakota	13,864	23,016	46	48	79%	73%	66.0%	38
Iowa	16,131	26,747	28	36	92%	85%	65.8%	39
Oklahoma	14,492	23,944	43	45	83%	76%	65.2%	40
Idaho	15,109	23,861	40	46	86%	76%	57.9%	41
Montana	15,954	25,081	29	42	91%	80%	57.2%	42
South Dakota	13,674	21,300	47	51	78%	68%	55.8%	43
Wyoming	18,718	28,991	11	25	107%	93%	54.9%	44
West Virginia	14,948	22,842	41	49	85%	73%	52.8%	45
Hawaii	21,147	32,252	6	15	121%	103%	52.5%	46
New Mexico	16,812	25,302	26	41	96%	81%	50.5%	47
Alaska	29,048	43,097	1	1	166%	138%	48.4%	48
Louisiana	16,557	24,300	27	44	94%	78%	46.8%	49
Washington	21,268	30,475	4	23	121%	97%	43.3%	50
Utah	16,864	23,652	25	47	96%	76%	40.3%	51
U.S. AVERAGE	$17,544	$31,315			100%	100%	78.5%	

Map 1

Average Teacher Salary 1989-90



Map 2

Average Teacher Salary Increase 1980-81 to 1989-90

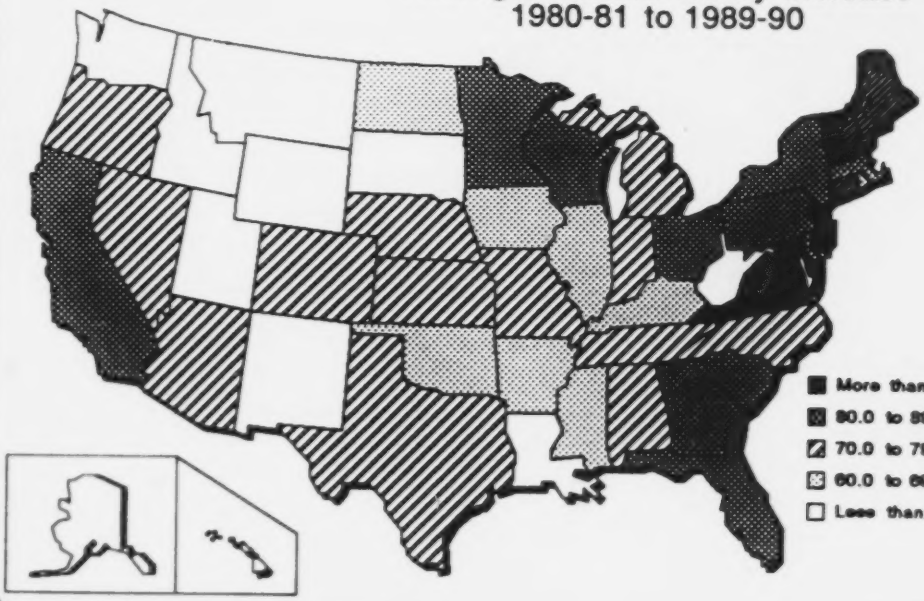


TABLE I–4

AVERAGE SALARY OF TEACHERS IN 1989–90 COMPARED TO ANNUAL EARNINGS IN THE PRIVATE SECTOR, 1989

State	Average Teachers Salary	Private Sector Annual Earnings	Ratio of Teachers To Private Sector	Rank 1990	Rank 1989	Rank 1981
Rhode Island	$36,057	$20,199	1.79	1	1	2
Wisconsin	32,600	19,493	1.67	2	2	10
Maryland	36,481	22,417	1.63	3	4	4
Oregon	30,842	19,578	1.58	4	6	12
Hawaii	32,252	20,484	1.57	5	5	1
Alaska	43,097	27,646	1.56	6	3	23
California	37,625	24,529	1.53	7	9	6
Pennsylvania	33,435	21,812	1.53	8	11	18
Iowa	26,747	17,755	1.51	9	12	24
Washington	30,475	20,270	1.50	10	15	5
Nebraska	25,522	17,060	1.50	11	23	25
Connecticut	40,768	27,301	1.49	12	20	39
Michigan	36,427	24,504	1.49	13	24	17
New Mexico	25,302	17,047	1.48	14	45	11
Minnesota	32,190	21,720	1.48	15	13	13
South Carolina	26,638	18,078	1.47	16	18	29
Indiana	30,978	21,030	1.47	17	16	35
Vermont	28,849	19,597	1.47	18	10	45
Montana	25,081	17,061	1.47	19	8	14
North Carolina	27,814	18,970	1.47	20	27	9
Arizona	29,402	20,068	1.47	21	19	19
Mississippi	24,365	16,637	1.46	22	30	42
Wyoming	28,991	19,803	1.46	23	7	38
Virginia	30,926	21,162	1.46	24	21	27
Colorado	30,758	21,153	1.45	25	25	28
Nevada	30,587	21,057	1.45	26	14	16
Florida	28,787	19,819	1.45	27	22	22
New York	38,925	26,989	1.44	28	26	8
Maine	26,881	18,806	1.43	29	28	26
Kentucky	26,275	18,468	1.42	30	35	37
Tennessee	27,052	19,056	1.42	31	36	30
South Dakota	21,300	15,014	1.42	32	31	15
Ohio	30,567	21,687	1.41	33	33	44
Kansas	27,220	19,589	1.39	34	34	40
Massachusetts	34,175	24,597	1.39	35	38	7
Illinois	32,917	23,901	1.38	36	40	20
Delaware	33,377	24,499	1.36	37	17	33
New Jersey	35,676	26,369	1.35	38	32	31
Alabama	25,500	18,872	1.35	39	37	32
D.C.	39,850	29,571	1.35	40	39	3
Georgia	28,013	20,796	1.35	41	41	34
New Hampshire	28,986	21,859	1.33	42	44	47
North Dakota	23,016	17,414	1.32	43	29	46
Missouri	27,229	20,607	1.32	44	46	43
Arkansas	22,471	17,100	1.31	45	42	41
Idaho	23,861	18,243	1.31	46	43	36
Utah	23,652	18,420	1.28	47	48	21
Texas	27,400	21,842	1.25	48	47	49
Oklahoma	23,944	19,509	1.23	49	49	51
Louisiana	24,300	20,067	1.21	50	50	48
West Virginia	22,842	20,231	1.13	51	51	50
U.S. AVERAGE	$31,315	$22,287	1.41			

TABLE I–5

AVERAGE SALARY OF TEACHERS IN 1989–90 COMPARED TO 1989 PER CAPITA PERSONAL INCOME

State	Average Teacher Salary	Per Capita Personal Income	Ratio of Salary to Per Capita Income			Rank		
			1989–90	1988–89	1980–81	89–90	88–89	80–81
Mississippi	$24,365	$11,835	2.06	2.05	1.88	1	3	16
Michigan	36,427	17,745	2.05	2.17	2.09	2	1	3
Wyoming	28,991	14,135	2.05	2.02	1.65	3	5	39
Alaska	43,097	21,173	2.04	2.14	2.10	4	2	2
Rhode Island	36,057	18,061	2.00	2.04	2.08	5	4	4
South Carolina	26,638	13,616	1.96	1.96	1.89	6	10	13
Oregon	30,842	15,785	1.95	1.96	1.83	7	11	21
Wisconsin	32,600	16,759	1.95	2.01	1.79	8	6	24
Indiana	30,978	16,005	1.94	1.98	1.87	9	8	18
Pennsylvania	33,435	17,422	1.92	1.93	1.81	10	13	22
New Mexico	25,302	13,191	1.92	1.97	2.06	11	9	5
Kentucky	26,275	13,777	1.91	1.95	1.96	12	12	11
California	37,625	19,740	1.91	1.87	1.79	13	21	26
New York	38,925	20,540	1.90	1.90	1.99	14	17	7
Alabama	25,500	13,679	1.86	2.00	1.97	15	7	10
Louisiana	24,300	13,041	1.86	1.84	1.91	16	23	12
Ohio	30,567	16,499	1.85	1.88	1.74	17	18	33
Arizona	29,402	15,881	1.85	1.91	1.88	18	16	17
Tennessee	27,052	14,765	1.83	1.88	1.88	19	20	15
North Carolina	27,814	15,221	1.83	1.82	1.98	20	25	9
West Virginia	22,842	12,529	1.82	1.88	1.89	21	19	14
Utah	23,652	13,027	1.82	1.92	2.12	22	15	1
Minnesota	32,190	17,746	1.81	1.83	1.77	23	24	29
Montana	25,081	13,852	1.81	1.93	1.79	24	14	25
Texas	27,400	15,483	1.77	1.81	1.61	25	26	41
Hawaii	32,252	18,306	1.76	1.85	1.99	26	22	6
Vermont	28,849	16,399	1.76	1.74	1.52	27	38	49
Colorado	30,758	17,494	1.76	1.80	1.69	28	27	36
Delaware	33,377	19,116	1.75	1.78	1.78	29	31	28
Illinois	32,917	18,858	1.75	1.77	1.79	30	32	23
North Dakota	23,016	13,261	1.74	1.75	1.62	31	37	40
Maryland	36,481	21,020	1.74	1.76	1.76	32	35	32
Idaho	23,861	13,762	1.73	1.80	1.76	33	29	30
Arkansas	22,471	12,984	1.73	1.79	1.78	34	30	27
Georgia	28,013	16,188	1.73	1.80	1.85	35	28	20
Washington	30,475	17,640	1.73	1.76	1.98	36	34	8
Iowa	26,747	15,524	1.72	1.75	1.69	37	36	35
D.C.	39,850	23,436	1.70	1.70	1.86	38	39	19
Oklahoma	23,944	14,151	1.69	1.76	1.54	39	33	47
Kansas	27,220	16,182	1.68	1.63	1.53	40	46	48
Nebraska	25,522	15,360	1.66	1.57	1.60	41	48	42
Missouri	27,229	16,431	1.66	1.68	1.66	42	40	38
Connecticut	40,768	24,604	1.66	1.65	1.44	43	42	50
Maine	26,881	16,310	1.65	1.67	1.70	44	41	34
Virginia	30,926	18,970	1.63	1.65	1.58	45	44	43
Florida	28,787	17,694	1.63	1.63	1.58	46	47	44
Nevada	30,587	18,827	1.62	1.65	1.55	47	43	46
South Dakota	21,300	13,461	1.58	1.65	1.66	48	45	37
Massachusetts	34,175	22,196	1.54	1.56	1.76	49	49	31
New Jersey	35,676	23,764	1.50	1.50	1.58	50	50	45
New Hampshire	28,986	20,251	1.43	1.40	1.37	51	51	51
U.S. AVERAGE	$31,315	$17,567	1.78	1.80	1.77			

TABLE I–6

STATE RANKINGS BY 1989–90 AVERAGE TEACHER SALARY ADJUSTED BY THE 1989 AFT INTERSTATE COST–OF–LIVING INDEX

State	Average Salary	Cost of Living Index	Adjusted Average Salary	Adjusted Rank	Original Rank
Michigan	$36,427	93.7	$38,877	1	7
California	37,625	107.4	35,033	2	5
Wisconsin	32,600	93.1	35,015	3	14
Minnesota	32,190	93.2	34,530	4	16
Illinois	32,917	95.8	34,363	5	13
Indiana	30,978	92.1	33,622	6	17
New York	38,925	116.0	33,547	7	4
Alaska	43,097	130.0	33,152	8	1
Maryland	36,481	111.5	32,729	9	6
Oregon	30,842	94.4	32,669	10	19
Rhode Island	36,057	110.5	32,638	11	8
Virginia	30,926	95.7	32,327	12	18
Ohio	30,567	94.7	32,278	13	22
Pennsylvania	33,435	103.9	32,173	14	11
Nevada	30,587	95.4	32,076	15	21
Connecticut	40,768	127.3	32,022	16	2
Wyoming	28,991	91.7	31,624	17	25
Delaware	33,377	106.2	31,415	18	12
Colorado	30,758	98.0	31,374	19	20
Washington	30,475	97.6	31,233	20	23
D.C.	39,850	128.4	31,036	21	3
Georgia	28,013	91.8	30,528	22	29
North Carolina	27,814	91.2	30,486	23	30
Vermont	28,849	96.0	30,051	24	27
Texas	27,400	91.2	30,035	25	31
Tennessee	27,052	90.3	29,942	26	34
Florida	28,787	96.2	29,920	27	28
Kansas	27,220	91.1	29,880	28	33
Missouri	27,229	91.6	29,737	29	32
South Carolina	26,638	90.1	29,552	30	37
Kentucky	26,275	89.1	29,479	31	38
Iowa	26,747	91.5	29,226	32	36
Arizona	29,402	100.6	29,223	33	24
Alabama	25,500	89.8	28,395	34	40
Maine	26,881	95.0	28,306	35	35
Nebraska	25,522	90.8	28,094	36	39
Mississippi	24,365	88.1	27,646	37	43
New Jersey	35,676	129.3	27,584	38	9
Montana	25,081	91.3	27,464	39	42
New Hampshire	28,986	105.9	27,374	40	26
New Mexico	25,302	92.8	27,253	41	41
Massachusetts	34,175	126.6	27,003	42	10
Oklahoma	23,944	89.6	26,720	43	45
Louisiana	24,300	91.3	26,623	44	44
Utah	23,652	90.2	26,220	45	47
Idaho	23,861	91.6	26,041	46	46
North Dakota	23,016	89.5	25,718	47	48
West Virginia	22,842	89.6	25,507	48	49
Arkansas	22,471	88.4	25,429	49	50
Hawaii	32,252	127.0	25,395	50	15
South Dakota	21,300	89.1	23,902	51	51
U.S. AVERAGE	$31,315	100.0	$31,315		

Source: AFT Research Department (contact department for technical paper). except Hawaii, Alaska, and Washington D.C. (see data sources appendix to this report)

TABLE I–7

EXPENDITURES PER PUPIL (MEMBERSHIP) IN 1989–90*, AND THE AVERAGE TEACHER SALARY IN 1989–90

	State	Expenditures Per Pupil		Percent of U.S. Average	Average Salary 1988–89	Percent of U.S. Average	Rank
1	New Jersey	$7,586	b	166%	$35,676	114%	9
2	Alaska	7,467	b	163%	43,097	138%	1
3	Connecticut	7,415		162%	40,768	130%	2
4	New York	7,300		159%	38,925	124%	4
5	D.C.	6,424		140%	39,850	127%	3
6	Massachusetts	5,766	b	126%	34,175	109%	10
7	Rhode Island	5,711	c	125%	36,057	115%	8
8	Vermont	5,524	c	121%	28,849	92%	27
9	New Hampshire	5,356	c	117%	28,986	93%	26
10	Pennsylvania	5,307	b	116%	33,435	107%	11
11	Wyoming	5,237	b	114%	28,991	93%	25
12	Maryland	5,211	b	114%	36,481	116%	6
13	Delaware	5,206	b	114%	33,377	107%	12
14	Michigan	5,081	b	111%	36,427	116%	7
15	Wisconsin	4,868	c	106%	32,600	104%	14
16	Maine	4,832	b	106%	26,881	86%	35
17	Oregon	4,731		103%	30,842	98%	19
18	Washington	4,590	b	100%	30,475	97%	23
19	Virginia	4,471	c	98%	30,926	99%	18
20	Minnesota	4,463	b	98%	32,190	103%	16
21	Iowa	4,380	b	96%	26,747	85%	36
22	Florida	4,378	c	96%	28,787	92%	28
23	Hawaii	4,362	b	95%	32,252	103%	15
24	Illinois	4,331	c	95%	32,917	105%	13
25	California	4,309	c	94%	37,625	120%	5
26	Colorado	4,300	b	94%	30,758	98%	20
27	Nebraska	4,206	c	92%	25,522	82%	39
28	Ohio	4,109	c	90%	30,567	98%	22
29	Kansas	4,071	b	89%	27,220	87%	33
30	Montana	3,996	b	87%	25,081	80%	42
31	Indiana	3,995	c	87%	30,978	99%	17
32	Nevada	3,905	b	85%	30,587	98%	21
33	Arizona	3,902	b	85%	29,402	94%	24
34	West Virginia	3,854	b	84%	22,842	73%	49
35	Missouri	3,784	b	83%	27,229	87%	32
36	Texas	3,772	b	82%	27,400	87%	31
37	Georgia	3,722	b	81%	28,013	89%	29
38	North Carolina	3,581	c	78%	27,814	89%	30
39	South Carolina	3,522	b	77%	26,638	85%	37
40	North Dakota	3,383	b	74%	23,016	73%	48
41	South Dakota	3,264		71%	21,300	68%	51
42	Tennessee	3,235	c	71%	27,052	86%	34
43	New Mexico	3,214		70%	25,302	81%	41
44	Louisiana	3,194	b	70%	24,300	78%	44
45	Oklahoma	3,055	b	67%	23,944	76%	45
46	Arkansas	2,989	b	65%	22,471	72%	50
47	Kentucky	2,983	c	65%	26,275	84%	38
48	Alabama	2,825	b	62%	25,500	81%	40
49	Idaho	2,741	b	60%	23,861	76%	46
50	Mississippi	2,728	b	60%	24,365	78%	43
51	Utah	2,454	b	54%	23,652	76%	47
	U.S. AVERAGE	$4,577		100%	$31,315	100%	
	Virgin Islands	4,662	b	102%	28,000	89%	

*Expenditure figures correspond to the federal definition of current expenditures per member.
a=preliminary or estimate; b=AFT estimate (based on data supplied by states when available).
c=based primarily on December 1989 estimates reported by NCES

TABLE I–8

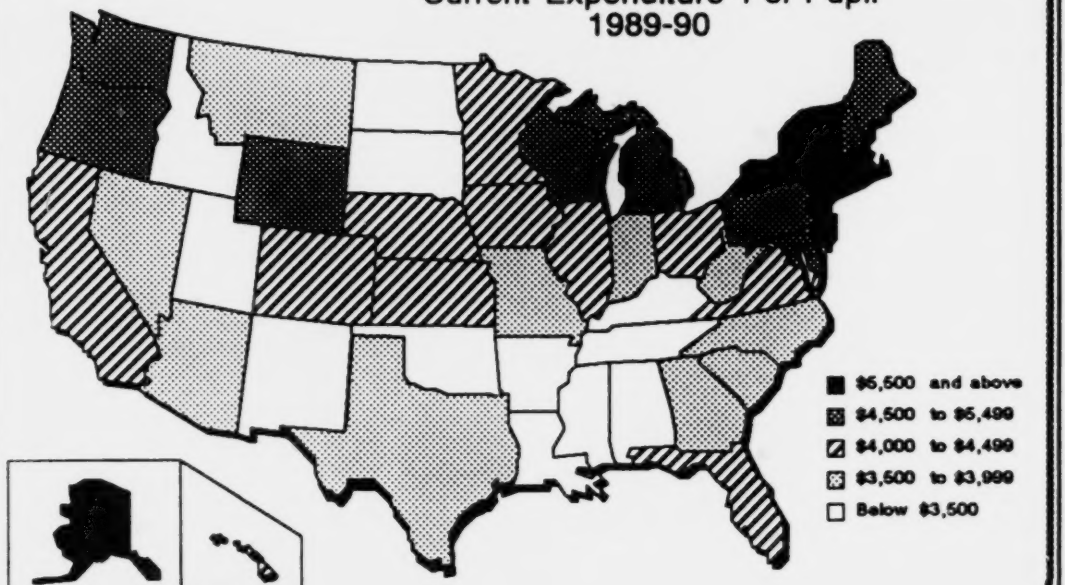
TRENDS IN EXPENDITURES PER PUPIL (MEMBERSHIP), 1987–88 TO 1989–90

State	Expenditures Per Pupil* 1987–88	Rank	Expenditures Per Pupil 1988–89	Rank	Expenditures Per Pupil 1989–90	Rank	Percent Change 1987–88 to 1988–89	Percent Change 1988–89 to 1989–90	Percent Change 1987–88 to 1989–90
New Jersey	$6,059	3	$6,878	2	$7,586	1	13.5%	10.3%	25.2%
Alaska	7,159	1	7,231	1	7,467	2	1.0%	3.3%	4.3%
Connecticut	5,905	4	6,832	3	7,415	3	15.7%	8.5%	25.6%
New York	6,196	2	6,803	4	7,300	4	9.8%	7.3%	17.8%
D.C.	5,662	5	6,159	5	6,424	5	8.8%	4.3%	13.5%
Massachusetts	4,965	6	5,440	6	5,766	6	9.6%	6.0%	16.1%
Rhode Island	4,951	7	5,348	7	5,711	7	8.0%	6.8%	15.3%
Vermont	4,927	8	5,197	8	5,524	8	5.5%	6.3%	12.1%
New Hampshire	4,080	18	4,715	13	5,356	9	15.6%	13.6%	31.3%
Pennsylvania	4,603	11	4,951	10	5,307	10	7.6%	7.2%	15.3%
Wyoming	4,742	9	5,075	9	5,237	11	7.0%	3.2%	10.4%
Maryland	4,575	12	4,884	11	5,211	12	6.8%	6.7%	13.9%
Delaware	4,606	10	4,865	12	5,206	13	5.6%	7.0%	13.0%
Michigan	4,350	13	4,537	15	5,081	14	4.3%	12.0%	16.8%
Wisconsin	4,296	14	4,563	14	4,868	15	6.2%	6.7%	13.3%
Maine	3,965	19	4,291	17	4,832	16	8.2%	12.6%	21.9%
Oregon	4,266	15	4,506	16	4,731	17	5.6%	5.0%	10.9%
Washington	3,875	22	4,234	19	4,590	18	9.3%	8.4%	18.4%
Virginia	3,873	23	4,155	21	4,471	19	7.3%	7.6%	15.4%
Minnesota	4,132	16	4,222	20	4,463	20	2.2%	5.7%	8.0%
Iowa	3,867	24	4,277	18	4,380	21	10.6%	2.4%	13.3%
Florida	3,778	26	4,054	25	4,378	22	7.3%	8.0%	15.9%
Hawaii	3,661	29	3,965	26	4,362	23	8.3%	10.0%	19.1%
Illinois	3,822	25	4,059	24	4,331	24	6.2%	6.7%	13.3%
California	3,876	21	4,100	23	4,309	25	5.8%	5.1%	11.2%
Colorado	4,100	17	4,143	22	4,300	26	1.0%	3.8%	4.9%
Nebraska	3,712	28	3,942	28	4,206	27	6.2%	6.7%	13.3%
Ohio	3,595	30	3,880	30	4,109	28	7.9%	5.9%	14.3%
Kansas	3,724	27	3,896	29	4,071	29	4.6%	4.5%	9.3%
Montana	3,878	20	3,949	27	3,996	30	1.8%	1.2%	3.1%
Indiana	3,454	33	3,716	31	3,995	31	7.6%	7.5%	15.6%
Nevada	3,298	36	3,583	34	3,905	32	8.6%	9.0%	18.4%
Arizona	3,498	32	3,716	32	3,902	33	6.2%	5.0%	11.5%
West Virginia	3,579	31	3,705	33	3,854	34	3.5%	4.0%	7.7%
Missouri	3,425	34	3,570	35	3,784	35	4.2%	6.0%	10.5%
Texas	3,334	35	3,542	36	3,772	36	6.2%	6.5%	13.1%
Georgia	3,195	38	3,511	37	3,722	37	9.9%	6.0%	16.5%
North Carolina	3,153	40	3,310	39	3,581	38	5.0%	8.2%	13.6%
South Carolina	3,143	41	3,342	38	3,522	39	6.3%	5.4%	12.1%
North Dakota	3,239	37	3,201	40	3,383	40	-1.2%	5.7%	4.5%
South Dakota	3,071	42	3,167	41	3,264	41	3.1%	3.1%	6.3%
Tennessee	2,855	45	3,032	43	3,235	42	6.2%	6.7%	13.3%
New Mexico	3,190	39	3,134	42	3,214	43	-1.8%	2.6%	0.7%
Louisiana	2,886	44	2,957	45	3,194	44	2.5%	8.0%	10.7%
Oklahoma	2,897	43	2,998	44	3,055	45	3.5%	1.9%	5.5%
Arkansas	2,771	46	2,869	46	2,989	46	3.5%	4.2%	7.9%
Kentucky	2,710	47	2,825	47	2,983	47	4.2%	5.6%	10.1%
Alabama	2,567	48	2,717	48	2,825	48	5.9%	4.0%	10.1%
Idaho	2,505	49	2,610	49	2,741	49	4.2%	5.0%	9.4%
Mississippi	2,416	50	2,585	50	2,728	50	7.0%	5.5%	12.9%
Utah	2,302	51	2,324	51	2,454	51	1.0%	5.6%	6.6%
U.S. AVERAGE	$3,930		4,288		$4,577		9.1%	6.7%	16.5%
Virgin Islands	3,984		4,661		4,662				

* Final tabulations of the U.S. Department of Education.

Map 3

Current Expenditure Per Pupil 1989-90



Map 4

1989 AFT Interstate Cost-Of-Living Index

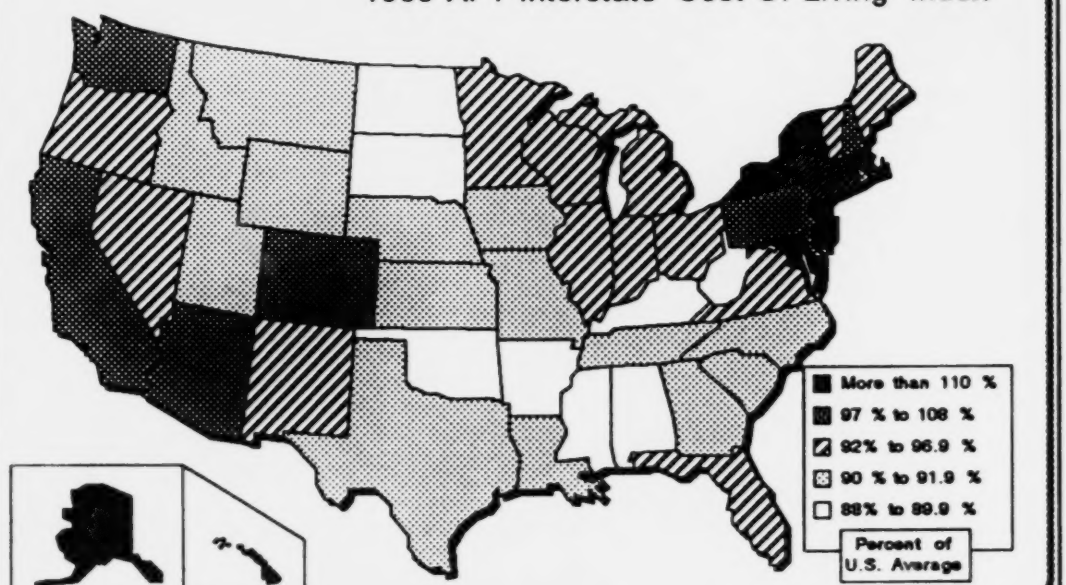


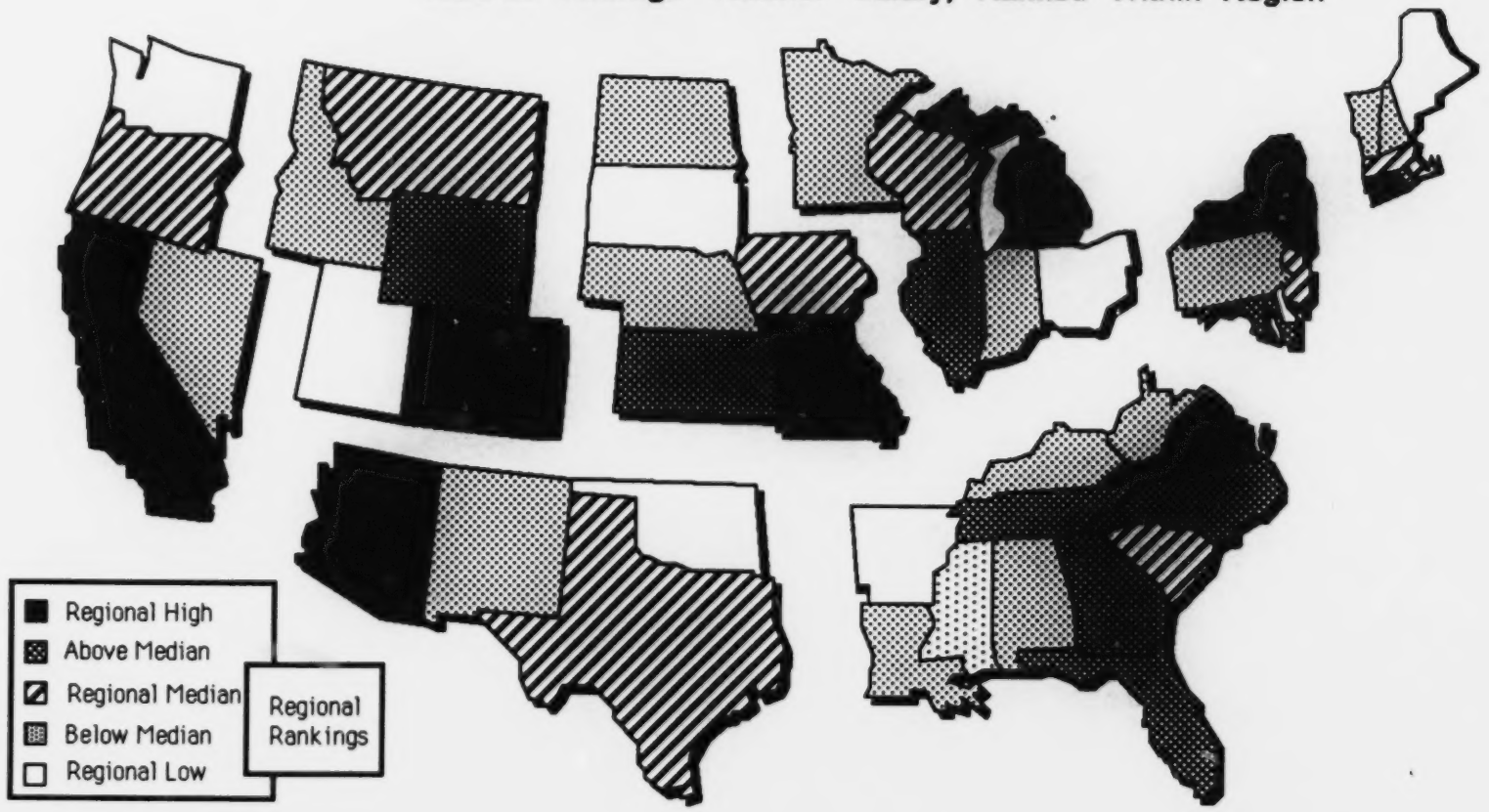
TABLE I-9

EXPENDITURES PER PUPIL AND THE AVERAGE TEACHER SALARY IN 1989–90 RANKED BY AVERAGE SALARY WITHIN REGION

State	Expenditures Per Pupil	Average Salary
NEW ENGLAND		
Connecticut	7,415	40,768
Rhode Island	5,711	36,057
Massachusetts	5,766	34,175
New Hampshire	5,356	28,986
Vermont	5,524	28,849
Maine	4,832	26,881
MIDEAST		
D.C.	6,424	39,850
New York	7,300	38,925
Maryland	5,211	36,481
New Jersey	7,586	35,676
Pennsylvania	5,307	33,435
Delaware	5,206	33,377
GREAT LAKES		
Michigan	5,081	36,427
Illinois	4,331	32,917
Wisconsin	4,868	32,600
Minnesota	4,463	32,190
Indiana	3,995	30,978
Ohio	4,109	30,567
PLAINS		
Missouri	3,784	27,229
Kansas	4,071	27,220
Iowa	4,380	26,747
Nebraska	4,206	25,522
North Dakota	3,383	23,016
South Dakota	3,264	21,300
SOUTHWEST		
Arizona	3,902	29,402
Texas	3,772	27,400
New Mexico	3,214	25,302
Oklahoma	3,055	23,944
SOUTHEAST		
Virginia	4,471	30,926
Florida	4,378	28,787
Georgia	3,722	28,013
North Carolina	3,581	27,814
Tennessee	3,235	27,052
South Carolina	3,522	26,638
Kentucky	2,983	26,275
Alabama	2,825	25,500
Mississippi	2,728	24,365
Louisiana	3,194	24,300
West Virginia	3,854	22,842
Arkansas	2,989	22,471
ROCKY MOUNTAINS		
Colorado	4,300	30,758
Wyoming	5,237	28,991
Montana	3,996	25,081
Idaho	2,741	23,861
Utah	2,454	23,652
FAR WEST		
California	4,309	37,625
Oregon	4,731	30,842
Nevada	3,905	30,587
Washington	4,590	30,475
Alaska	7,467	43,097
Hawaii	4,362	32,252
U.S. AVERAGE	**$4,577**	**$31,315**

Map 5

1988-89 Average Teacher Salary, Ranked Within Region



II. Trends in Teacher Salaries Compared to Other Workers and Professions

Trends In Teacher Salaries Compared to Inflation. The purchasing power of teachers, measured in 1990 dollars according to the Consumer Price Index for All Urban Consumers, has risen approximately $7,000 since 1981. Teachers however, gained just $350 during 1989. As shown in Table II-1 and Figure 2, purchasing power for teachers has been restored to the peak purchasing power period of 1971-73 with $1200 to spare. In 1956, the average teacher salary was $19,360 (in 1990 dollars)--about two-thirds of the current salary level and less than the national average beginninig teacher's salary. During the periods of rapid inflation in the mid-1970's and early 1980's, as shown in Figure II-1, the average teacher salary increase fell below the inflation rate at the onset of inflation but increased as inflation waned. The real wage gains experienced by teachers in the early 1980's and mid-1980's may be a product of this adjustment lag. In Table II-1 and the following tables, the 1990 inflation rate is estimated at 4.5 percent. The rate stands at 4.4 percent for the 12 months ending May 1990. The gap between the increase in the average teacher salary increase (5.7%) and the estimated inflation rate (4.5%) is almost identical to the gap experienced during the prior three years.

Trends In Teacher Salaries Compared to the Average Annual Earnings of All Workers. The ratio of teacher salaries to the mean average annual earnings of the full-time, nonagricultural worker was 1.18 in 1989 as shown in Table II-1. This ratio is at its highest level ever during the past 34 years. The ratio has been as low as 1.00 in 1957 and as high as 1.14 in 1971 but fell to 1.01 as recently as 1981. Figure II-2 illustrates these trends.

The teacher to average worker salary ratio is an index, and the average worker's salary should not be interpreted as a target for teacher salaries. Some economic forces--such as inflation and economic growth or stagnation--affect all workers in the economy. Consequently, merely adjusting for inflation does not adequately describe the financial well-being of teachers. Had teacher purchasing power remained the same since 1956, teachers would be earning approximately $7,000 less than the average worker in 1989. Furthermore, as the productivity of the economy increases and the value of all labor rises, teachers should share equally in economy-wide gains in productivity, roughly measured by the real (i.e. inflation adjusted) increase in the annual earnings of the average full-time worker.

Trends In Teacher Salaries Compared to the Average Annual Salaries of All Government Workers. Trends in government worker salaries have closely matched

trends in teachers salaries. Teachers outpaced government workers over the 1960's, with the ratio of teacher salaries to government worker salaries rising to 1.11 in 1968. During the 1970's, however, government workers fared much better than teachers and the ratio fell to 1.00 by 1982. In 1989, teachers had a 12 percent advantage over all government workers, about the same as the previous two years.

Trends in Teacher Salaries Adjusted for Work Experience. Though teacher salaries are at the highest levels ever, the average teacher in 1989-90 had an estimated 15.4 years of experience, more experience than at any time over the past three decades. Clearly, the rapid rise in teacher salaries over the early 1980s was due primarily to layoffs of low-paid teachers and minimal hiring of beginning teachers. This effect has abated over the past 3 or 4 years as the growth in teacher experience has leveled off due to the reduction in layoffs and an increase in hiring. The educational attainment of teachers has increased at a rate commensurate with their experience. In 1975, less than 40 percent of teachers held a masters degree. In 1985, the comparable figure was over 50 percent.

With an estimated 15.4 years of experience, the average teacher earned $31,315 in 1989. During 1972, the average teacher earned $30,091 (in 1990 dollars), but had only 10.7 years of experience. If a year of experience yields about 3.0 percent more on the salary schedule, a teacher with 15.4 years of experience in 1972 earned approximately $34,334 (in 1990 dollars)--$3,000 more than teachers with 15.4 years of experience in 1990. Adjustments for other years are graphed in Figure II-4. Clearly, continued teacher dissatisfaction with their salaries seems legitimate from this perspective. The 3.0 percent adjustment for a year of experience is approximate. In the school districts serving the nation's 100 largest cities in 1989, the average salary increase in moving from the BA beginning salary to the MA maximum salary (reached in an average of 14 increments on a 15-step schedule) was $994 or 3.0% of the average MA maximum salary of $34,271.

Trends in Teacher Salaries Compared to the Annual Earnings of Male and Female Workers. The work force has changed substantially over the past 30 years. Since 1961, both the average worker and average teacher have gained about one year of education, but the typical teacher still has four more years of education than the average worker. The influx of female workers in the labor force might make comparisons to the average worker problematic. The entry of many low-paid female workers could invalidate the use of the teacher/average worker salary ratio as an index by which to evaluate trends in teacher salaries. On the other hand, the comparison to female workers over time helps index the relative attractiveness of the female-dominated teaching occupation. Women comprise approximately 85 percent of elementary teachers and about two-thirds of all teachers. Table II-2 contains separate comparisons of the average teacher salary to full-time male and full-time female workers.

Teachers earned approximately 20 to 25 percent less than male workers in the U.S. economy during the 1960's, as shown in Table III-2 and graphed in Figure II-5. The deficit grew to 30 percent by 1979 as the salaries of teachers deteriorated over the decade. Over the past decade, however, the gap fell to just an 11 percent advantage in 1989--the best teachers have done in any period during the past 30 years. The earnings of the average full-time, year-round female worker grew faster relative to teacher salaries until 1982. During the early 1960's, teachers expected to make almost 50 percent more than the typical female worker, but by 1982 the advantage dipped to only 18 percent. By 1989, however, teachers earned 35 percent more than the average full-time female worker. Female workers as a whole failed to make much progress against male workers between 1960 and 1975, but over the next 15 years female earnings grew from 55 percent to 65 percent of male earnings.

Average Teacher Salaries Compared to Selected White-Collar Occupations. The relationship of salaries in other white-collar occupations to each other changed little over the past 25 years, as shown in Table II-3 and illustrated in Figure II-6. For the sixth consecutive year, the average teacher salary grew faster or at the same rate as salaries in all other white-collar occupations (4th panel of Table II-3) except for lawyers in 1988. The lawyers' average salary grew at a 6.2 percent rate in 1988. The job categories described in the tables and figure, such as Accountant "III" or Chemist "IV", contain the accountant or chemist who had earnings in the middle of the income distribution for all accountants or chemists. The figures in Table II-3 are the average of all people in that job category, such as Accountant III or Chemist IV. Lawyers earned about double the average teacher salary, chemists and engineers about 60 percent more and auditors and accountants about 15 to 20 percent more. Salaries in other white-collar occupations deteriorated relative to teacher salaries through the mid-1970's. Other white-collar occupations gained sharply on teachers from the mid-1970's until 1982, but in just the past five years, most of this gain has been erased. In 1962, teachers earned less relative to all of the occupations listed in the tables compared to 1990.

Teacher Salaries Compared to Academic Salaries. Academic salaries have not maintained the same consistent relationship with teacher salaries that private sector white-collar occupations have kept. The salary advantage of assistant professors over teachers had declined continuously since 1963, and in 1988, the advantage slipped to one percent (third panel of Table II-3). Salaries of assistant professors reported to the AUUP in the subsequent two years, however, rebounded sharply and increased by nearly 15 percent over the past two years. Assistant professors now average a 5 percent higher salary than elementary and secondary teachers. While full professors still have an 84 percent advantage, this figure fell continuously from a 120 percent advantage in 1967 to an 81% advantage in 1984. During the 1960's, full professors enjoyed higher real earnings than did Attorney III's. For 1985, 1986 and 1987 academics experienced salary gains on par with teachers. In 1988 academic salaries improved at a slower rate than teacher salaries, but in

1989, they rose at a 6.2 percent rate, slightly above teacher salary growth, and they rose in 1990 by 6.0%, again ahead of teacher salary increases.

Projected Wage Increases For 1990-91. An analysis of about 40 teacher salary adjustments or wage agreements covering 1,000 or more workers for 1990-91 indicates that teacher salaries will rise at least as much next year as in 1989-90. The average increase reported in multi-year contracts prior to September 1989 for 17 agreements covering 1990-91 is 6.3 percent, while the average increase in 23 settlements reported between August 1989 and April 1990 for 1990-91 is 6.4 percent. Based on the same projections methodology applied to 77 wage agreements, a 5.8 percent wage increase was predicted for 1989-90. The actual national average increase was 5.7 percent. Figure 9 at the beginning of this report graphs these data against past projections using this data source and the national average salary based on data collected from state departments of education.

Salaries of Nonteaching Personnel. The average teacher salary increase of 171.8% since 1975-76 has been more than the increase in any category of nonteaching personnel shown in Table II-4, except central office secretaries. Superintendents (up 148 percent) and high school principals (up 143 percent) have lost ground to teachers. Though no data on age exist for occupations other than teaching, the closing of the teacher-administrator salary gap probably reflects the rapid increase in teacher experience over the decade illustrated in Figures II-3 and II-4. Beginning teacher salaries, for example, rose only 156 percent. Adjusted for inflation, school personnel paid hourly have not experienced wage growth over the past five years. In 1985-86, teacher aides made $7.40 per hour; now they make $7.43. Over the same period, custodian wages declined 14 cents per hour and cafeteria workers got 10 cents an hour less. Bus drivers received $9.21 per hour in both years.

During the 1989-90 school year, superintendents' salaries grew 5.9 percent, slightly in excess of the teacher salary growth rate. Teacher aide pay improved at a 5.4% rate, but all other hourly workers got less than 5 percent.

TABLE II-1

TRENDS IN TEACHER SALARIES COMPARED TO THE AVERAGE ANNUAL EARNINGS OF ALL WORKERS AND OF ALL GOVERNMENT WORKERS

	Mean Teacher Salary	CPI	CPI Change	Mean Annual Earnings (1990 Dollars)			Ratio of Teacher Salary to Salary of:	
				Teachers	All Workers	Government Workers	All Workers	Government Workers
1990	$31,315	131.8 *	4.5%	$31,315				
1989	29,636	126.1	4.6%*	30,970	$26,239	$27,624	1.18	1.12
1988	28,071	120.5	4.4%	30,697	26,301 *	27,505 *	1.17	1.12
1987	26,615	115.4	4.4%	30,391	26,164	27,397	1.16	1.11
1986	25,260	110.5	1.1%	30,123	26,159	27,708	1.15	1.09
1985	23,572	109.3	3.8%	28,419	25,279	26,696	1.12	1.06
1984	21,974	105.3	4.1%	27,499	25,180	26,226	1.09	1.05
1983	20,547	101.2	3.7%	26,755	25,135	25,884	1.06	1.03
1982	18,945	97.6	3.8%	25,579	24,933	25,500	1.03	1.00
1981	17,364	94.0	8.9%	24,342	24,117	24,454	1.01	1.00
1980	16,100	86.3	12.5%	24,584	24,075	24,310	1.02	1.01
1979	14,970	76.7	13.3%	25,719	24,607	25,170	1.05	1.02
1978	14,207	67.7	9.0%	27,653	25,804	26,749	1.07	1.03
1977	13,352	62.1	6.7%	28,333	26,238	27,395	1.08	1.03
1976	12,591	58.2	4.9%	28,508	26,280	27,519	1.08	1.04
1975	11,690	55.5	6.9%	27,756	25,699	27,158	1.08	1.02
1974	10,778	51.9	12.3%	27,365	25,333	26,979	1.08	1.01
1973	10,176	46.2	8.7%	29,025	25,943	28,393	1.12	1.02
1972	9,705	42.5	3.4%	30,091	26,666	29,199	1.13	1.03
1971	9,269	41.1	3.3%	29,718	25,966	27,504	1.14	1.08
1970	8,635	39.8	5.6%	28,590	25,015	26,494	1.14	1.08
1969	7,952	37.7	6.2%	27,795	24,771	25,100	1.12	1.11
1968	7,423	35.5	4.7%	27,554	24,683	24,905	1.12	1.11
1967	6,830	33.9	3.0%	26,549	24,190	24,158	1.10	1.10
1966	6,485	32.9	3.5%	25,974	23,873	23,757	1.09	1.09
1965	6,195	31.8	1.9%	25,671	23,635	23,664	1.09	1.08
1964	5,995	31.2	1.0%	25,320	23,216	23,153	1.09	1.09
1963	5,732	30.9	1.6%	24,444	22,334	22,172	1.09	1.10
1962	5,515	30.4	1.3%	23,906	21,930	21,619	1.09	1.11
1961	5,275	30.0	0.7%	23,170	21,429	21,319	1.08	1.09
1960	4,995	29.8	1.4%	22,088	20,950	20,654	1.05	1.07
1959	4,797	29.4	1.7%	21,501	20,568	20,142	1.05	1.07
1958	4,571	28.9	1.8%	20,842	19,926	19,712	1.05	1.06
1957	4,239	28.4	2.9%	19,669	19,605	18,747	1.00	1.05
1956	4,055	27.6		19,360	19,338	18,261	1.00	1.06

* Estimated

Figure II-1

Annual Rate of Increase in Teacher Salaries Compared to the Consumer Price Index

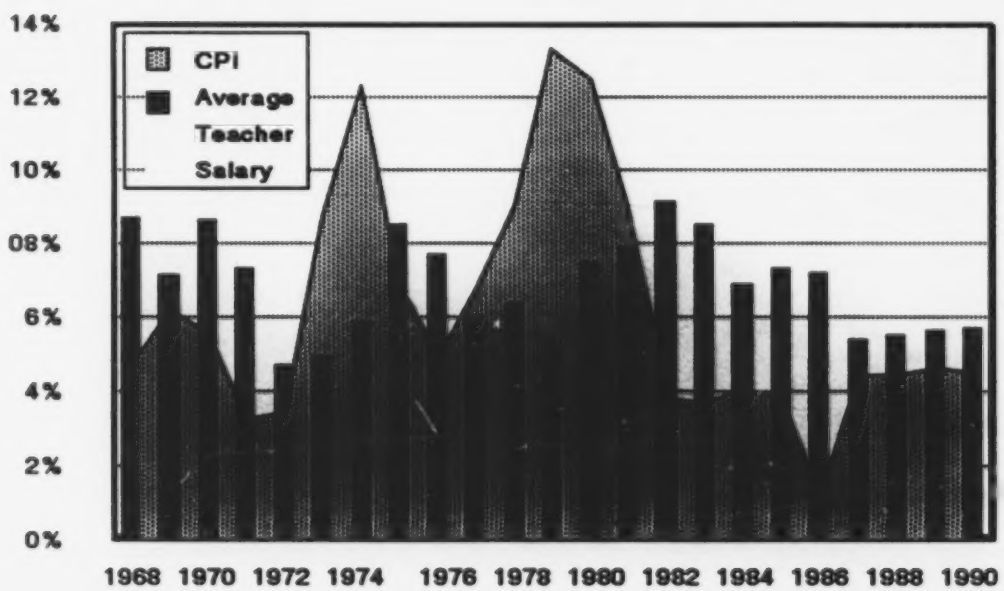


Figure II-2

Trends in Annual Earnings of Teachers, Government Workers, and All Workers

(Mean Annual Earnings in 1990 Dollars)

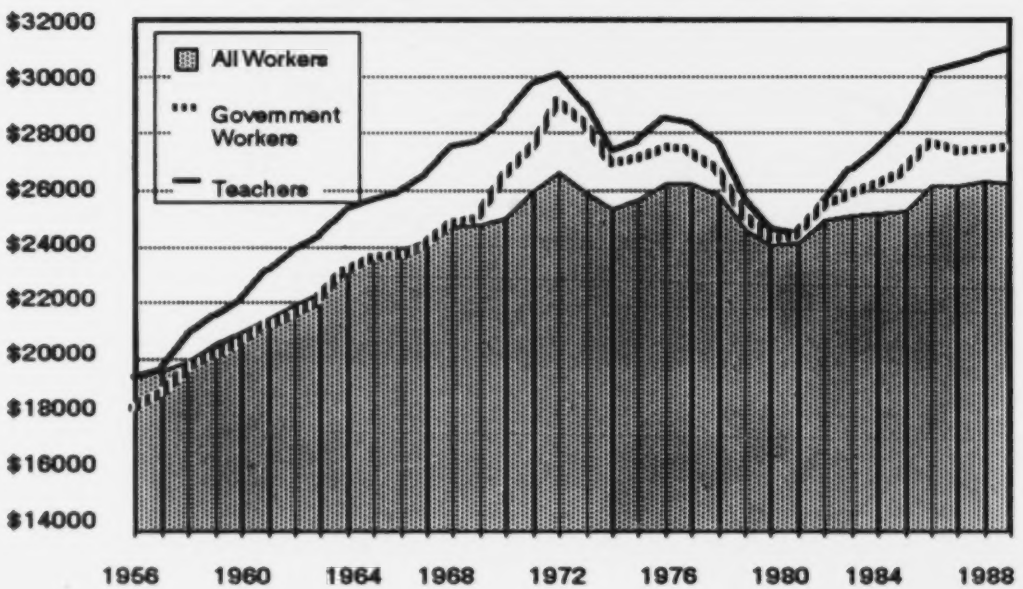


Figure II-3

The Average Teacher Salary Compared to the Average Experience Level of Teachers

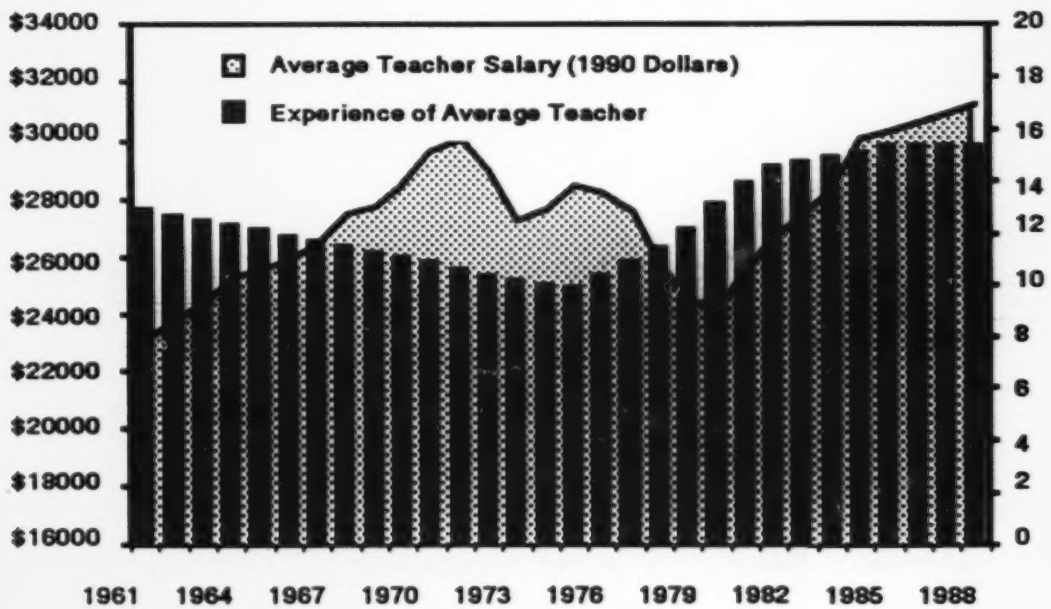


Figure II-4

Trends in Annual Earnings of Teachers, Controlling For Work Experience

(Mean Annual Earnings in 1990 Dollars)

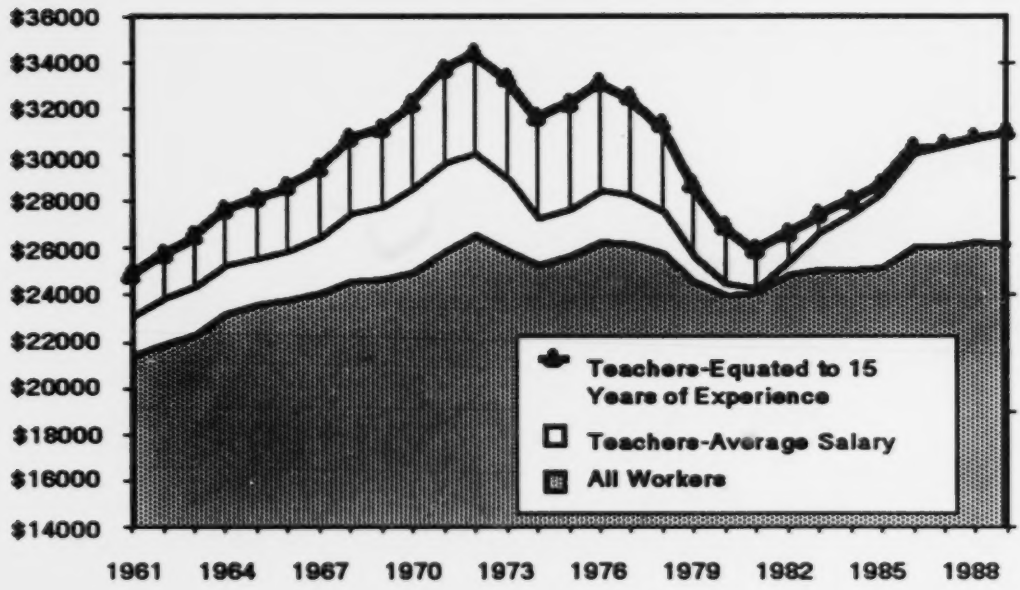


TABLE II-2

TRENDS IN TEACHER SALARIES COMPARED TO THE AVERAGE ANNUAL MONEY INCOME OF MALE AND FEMALE INDIVIDUALS WORKING FULL-TIME

	Mean Teacher Salary	Mean Annual Money Income (1990 Dollars)			Female Percent Of Male Earnings	Teacher Salary As Percent Of Earnings For:		Annual Percent Increase in Nominal Dollars		
		Teachers	Men	Women		Men	Women	Teacher	Men	Women
1990	31,315	31,315						5.7%		
1989	29,636	30,970	34,825	22,896	66%	89%	135%	5.6%	4.2%	4.1%
1988	28,071	30,697	34,964	23,010	66%	88%	133%	5.5%	2.5%	5.6%
1987	26,615	30,391	35,626	22,756	64%	85%	134%	5.4%	2.9%	2.9%
1986	25,260	30,123	36,158	23,096	64%	83%	130%	7.2%	3.2%	3.9%
1985	23,572	28,419	35,421	22,473	63%	80%	126%	7.3%	3.6%	3.6%
1984	21,974	27,499	35,497	22,508	63%	77%	122%	6.9%	4.1%	5.4%
1983	20,547	26,755	35,467	22,225	63%	75%	120%	8.5%	5.5%	6.3%
1982	18,945	25,579	34,843	21,678	62%	73%	118%	9.1%	4.0%	6.0%
1981	17,364	24,342	34,779	21,227	61%	70%	115%	7.9%	6.8%	9.2%
1980	16,100	24,584	35,454	21,179	60%	69%	116%	7.5%	8.3%	8.9%
1979	14,970	25,719	36,828	21,873	59%	70%	118%	5.4%	7.4%	11.2%
1978	14,207	27,653	38,837	22,283	57%	71%	124%	6.4%	9.0%	10.0%
1977	13,352	28,333	38,843	22,075	57%	73%	128%	6.0%	8.1%	9.1%
1976	12,591	28,508	38,330	21,589	56%	74%	132%	7.7%	7.8%	6.5%
1975	11,690	27,756	37,279	21,264	57%	74%	131%	8.5%	6.7%	8.4%
1974	10,778	27,365	37,359	20,977	56%	73%	130%	5.9%	7.0%	7.5%
1973	10,176	29,025	39,239	21,917	56%	74%	132%	4.9%	9.0%	11.2%
1972	9,705	30,091	39,123	21,428	55%	77%	140%	4.7%	7.0%	5.9%
1971	9,269	29,718	37,823	20,924	55%	79%	142%	7.3%	8.9%	6.8%
1970	8,635	28,590	35,870	20,226	56%	80%	141%	8.6%	5.1%	4.3%
1969	7,952	27,795	36,044	20,469	57%	77%	136%	7.1%	5.9%	8.3%
1968	7,423	27,554	36,143	20,063	56%	76%	137%	8.7%	10.9%	13.5%
1967	6,830	26,549	34,141	18,518	54%	78%	143%	5.3%	9.5%	7.9%
1966	6,485	25,974	32,135	17,679	55%	81%	147%	4.7%	1.0%	3.3%
1965	6,195	25,671	32,927	17,707	54%	78%	145%	3.3%	5.8%	5.2%
1964	5,995	25,320	31,727	17,148	54%	80%	148%	4.6%	6.5%	2.9%
1963	5,732	24,444	30,091	16,832	56%	81%	145%	3.9%	3.6%	4.4%
1962	5,515	23,906	29,524	16,389	56%	81%	146%	4.5%	3.6%	4.9%
1961	5,275	23,170	28,889	15,826	55%	80%	146%	5.6%	1.4%	1.7%
1960	4,995	22,088	28,681	15,671	55%	77%	141%	4.1%	5.7%	4.3%
1959	4,797	21,501	27,502	15,226	55%	78%	141%	4.9%	5.4%	2.1%
1958	4,571	20,842	26,556	15,165	57%	78%	137%	7.8%	5.8%	4.2%
1957	4,239	19,669	25,548	14,811	58%	77%	133%	4.5%	5.0%	5.5%
1956	4,055	19,360	25,042	14,447	58%	77%	134%			

*Estimated

Figure II-5

Ratio of Teachers Salary To Annual Money Income Male and Female Full-Time Workers

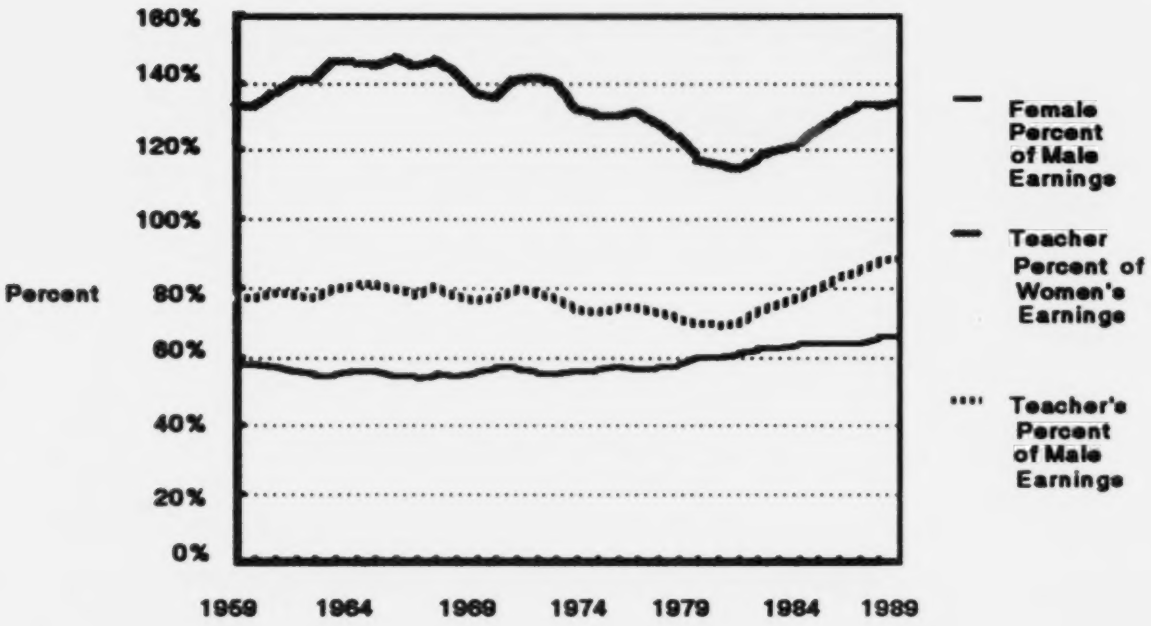


TABLE II-3

TRENDS IN TEACHER SALARIES COMPARED TO THE AVERAGE ANNUAL SALARIES OF SELECTED WHITE-COLLAR OCCUPATIONS

	Mean Teacher Salary	Account-ant III	Auditor III	Attorney III	Chemist IV	Engineer IV	Full Prof. Public Doctoral	Assistant Prof. Public Com-prehensive
1990	$31,315						$57,520	$32,730
1989	29,636	$34,134	$36,007	$57,172	$47,081	$47,291	54,240	30,900
1988 *	28,071	33,028	34,765	55,407	45,760	45,680	51,080	28,380
1987 *	26,615	32,074	33,302	52,158	43,480	44,360	48,740	27,520
1986 *	25,260	31,143	32,121	50,119	41,548	42,667	45,600	26,000
1985	23,572	30,037	31,246	47,742	39,418	40,991	42,600	24,400
1984	21,974	28,721	30,209	44,743	37,643	39,005	39,800	23,000
1983	20,547	27,346	28,245	42,271	35,439	36,726	38,200	22,000
1982	18,945	25,673	26,502	39,649	34,047	34,443	35,700	20,800
1981	17,364	23,545	24,401	36,373	30,801	31,352	32,900	19,300
1980	16,100	21,299	22,026	33,034	27,681	28,486	30,100	17,800
1979	14,970	19,468	20,303	29,644	25,459	25,989	28,200	16,600
1978	14,207	18,115	18,756	27,738	23,532	23,972	26,400	15,900
1977	13,352	16,545	17,108	25,460	21,674	22,072	25,200	15,700
1976	12,591	15,428	16,059	24,205	20,429	20,749	24,200	14,600
1975	11,690	14,458	15,334	22,558	19,204	19,443	22,700	13,900
1974	10,778	13,285	14,341	21,082	17,283	17,929	21,600	13,100
1973	10,176	12,472	13,568	19,565	16,140	17,030	20,500	12,500
1972	9,705	11,879	12,881	18,392	15,670	16,159	19,800	11,800
1971	9,269	11,383	12,227	17,509	15,036	15,535	19,200	11,400
1970	8,635	10,686	11,475	16,884	14,218	14,695	18,100	10,800
1968	7,423	9,367	9,977	15,283	12,751	13,095	16,100	9,500
1966	6,485	8,328	8,904	14,052	11,448	11,784	14,100	8,300
1964	5,995	7,908	8,520	12,816	10,632	11,016	12,500	7,700
1962	5,515	7,416	7,932	11,844	9,936	10,248	na	na
				(1990 DOLLARS)				
1990	$31,315						$55,043	$31,321
1989	30,970	$35,670	$37,627	$59,745	$49,200	$49,419	54,240	30,900
1988 *	30,697	36,118	38,018	60,591	50,042	49,954	55,859	31,035
1987 *	30,391	36,625	38,027	59,559	49,650	50,654	55,656	31,425
1986 *	30,123	37,139	38,305	59,768	49,547	50,882	54,379	31,006
1985	28,419	36,213	37,671	57,559	47,523	49,420	51,360	29,417
1984	27,499	35,942	37,804	55,992	47,107	48,812	49,807	28,783
1983	26,755	35,608	36,778	55,042	46,146	47,822	49,741	28,647
1982	25,579	34,662	35,782	53,532	45,969	46,503	48,200	28,083
1981	24,342	33,007	34,207	50,990	43,179	43,951	46,121	27,056
1980	24,584	32,522	33,632	50,441	42,267	43,496	45,961	27,179
1979	25,719	33,447	34,882	50,930	43,740	44,650	48,449	28,520
1978	27,653	35,260	36,508	53,991	45,804	46,660	51,386	30,949
1977	28,333	35,108	36,303	54,025	45,992	46,836	53,474	33,315
1976	28,508	34,932	36,360	54,804	46,255	46,979	54,793	33,057
1975	27,756	34,328	36,408	53,560	45,596	46,164	53,897	33,003
1974	27,366	33,731	36,412	53,527	43,882	45,522	54,843	33,261
1973	29,025	35,573	38,699	55,805	46,036	48,574	58,471	35,653
1972	30,091	36,832	39,939	57,026	48,586	50,102	61,391	36,587
1971	29,718	36,496	39,202	56,137	48,208	49,808	61,559	36,551
1970	28,590	35,380	37,993	55,902	47,075	48,654	59,928	35,758
1968	27,554	34,770	37,034	56,730	47,331	48,608	59,763	35,264
1966	25,974	33,356	35,663	56,283	45,853	47,199	56,475	33,244
1964	25,320	33,400	35,985	54,129	44,905	46,527	52,794	32,521
1962	23,906	32,146	34,383	51,340	43,069	44,422	na	na

* See note on next page.

(TABLE II–3 Continued)

RATIO OF SALARIES IN OTHER OCCUPATIONS TO TEACHER SALARIES

	Teachers	Account-ant III	Auditor III	Attorney III	Chemist IV	Engineer IV	Full Prof. Public Doctoral	Assistant Prof. Public Com-prehensive
1990	1.00						1.84	1.05
1989	1.00	1.15	1.21	1.93	1.59	1.60	1.83	1.04
1988 *	1.00	1.18	1.24	1.97	1.63	1.63	1.82	1.01
1987 *	1.00	1.21	1.25	1.96	1.63	1.67	1.83	1.03
1986 *	1.00	1.23	1.27	1.98	1.64	1.69	1.81	1.03
1985	1.00	1.27	1.33	2.03	1.67	1.74	1.81	1.04
1984	1.00	1.31	1.37	2.04	1.71	1.78	1.81	1.05
1983	1.00	1.33	1.37	2.06	1.72	1.79	1.86	1.07
1982	1.00	1.36	1.40	2.09	1.80	1.82	1.88	1.10
1981	1.00	1.36	1.41	2.09	1.77	1.81	1.89	1.11
1980	1.00	1.32	1.37	2.05	1.72	1.77	1.87	1.11
1979	1.00	1.30	1.36	1.98	1.70	1.74	1.88	1.11
1978	1.00	1.28	1.32	1.95	1.66	1.69	1.86	1.12
1977	1.00	1.24	1.28	1.91	1.62	1.65	1.89	1.18
1976	1.00	1.23	1.28	1.92	1.62	1.65	1.92	1.16
1975	1.00	1.24	1.31	1.93	1.64	1.66	1.94	1.19
1974	1.00	1.23	1.33	1.96	1.60	1.66	2.00	1.22
1973	1.00	1.23	1.33	1.92	1.59	1.67	2.01	1.23
1972	1.00	1.22	1.33	1.90	1.61	1.67	2.04	1.22
1971	1.00	1.23	1.32	1.89	1.62	1.68	2.07	1.23
1970	1.00	1.24	1.33	1.96	1.65	1.70	2.10	1.25
1968	1.00	1.26	1.34	2.06	1.72	1.76	2.17	1.28
1966	1.00	1.28	1.37	2.17	1.77	1.82	2.17	1.28
1964	1.00	1.32	1.42	2.14	1.77	1.84	2.09	1.28
1962	1.00	1.34	1.44	2.15	1.80	1.86	na	na
ANNUAL PERCENT INCREASE								
1990	5.7%						6.0%	5.9%
1989	5.6%	3.3%	3.6%	3.2%	2.9%	3.5%	6.2%	8.9%
1988 *	5.5%	3.0%	4.4%	6.2%	5.2%	3.0%	4.8%	3.1%
1987 *	5.4%	3.0%	3.7%	4.1%	4.7%	4.0%	6.9%	5.8%
1986 *	7.2%	3.7%	2.8%	5.0%	5.4%	4.1%	7.0%	6.6%
1985	7.3%	4.6%	3.4%	6.7%	4.7%	5.1%	7.0%	6.1%
1984	6.9%	5.0%	7.0%	5.8%	6.2%	6.2%	4.2%	4.5%
1983	8.5%	6.5%	6.6%	6.6%	4.1%	6.6%	7.0%	5.8%
1982	9.1%	9.0%	8.6%	9.0%	10.5%	9.9%	8.5%	7.8%
1981	7.9%	10.5%	10.8%	10.1%	11.3%	10.1%	9.3%	8.4%
1980	7.5%	9.4%	8.5%	11.4%	8.7%	9.6%	6.7%	7.2%
1979	5.4%	7.5%	8.2%	6.9%	8.2%	8.4%	6.8%	4.4%
1978	6.4%	9.5%	9.6%	8.9%	8.6%	8.6%	4.8%	1.3%
1977	6.0%	7.2%	6.5%	5.2%	6.1%	6.4%	4.1%	7.5%
1976	7.7%	6.7%	4.7%	7.3%	6.4%	6.7%	6.6%	5.0%
1975	8.5%	8.8%	6.9%	7.0%	11.1%	8.4%	5.1%	6.1%
1974	5.9%	6.5%	5.7%	7.8%	7.1%	5.3%	5.4%	4.8%
1973	4.9%	5.0%	5.3%	6.4%	3.0%	5.4%	3.5%	5.9%
1972	4.7%	4.4%	5.3%	5.0%	4.2%	4.0%	3.1%	3.5%
1971	7.3%	6.5%	6.6%	3.7%	5.8%	5.7%	6.1%	5.6%
1970	8.6%	6.6%	7.0%	6.3%	6.4%	5.8%	5.8%	6.9%
1968	8.7%	5.5%	5.6%	6.0%	5.9%	5.4%	7.3%	10.5%
1966	4.7%	2.5%	1.8%	3.0%	4.3%	3.6%	6.8%	5.1%
1964	4.6%	3.1%	3.3%	4.2%	3.7%	2.7%	5.9%	2.7%
1962	4.5%	3.0%	2.6%	2.1%	0.8%	4.5%	na	na

* The Professional, Technical, Administrative and Clerical survey is not exactly comparable in 1986,1987 and 1988. Prior to 1986 the survey included firms with at least 100 employees. In 1986 the minimum fell to 50, in 1987 the minimum was 20, and in 1988 and subsequent years, the minimum sized established was restored to 50 employe Small firms tend to pay less.

Figure II-6

Trends in the Average Salary in Teaching and in Selected White-Collar Occupations (1990 Dollars)

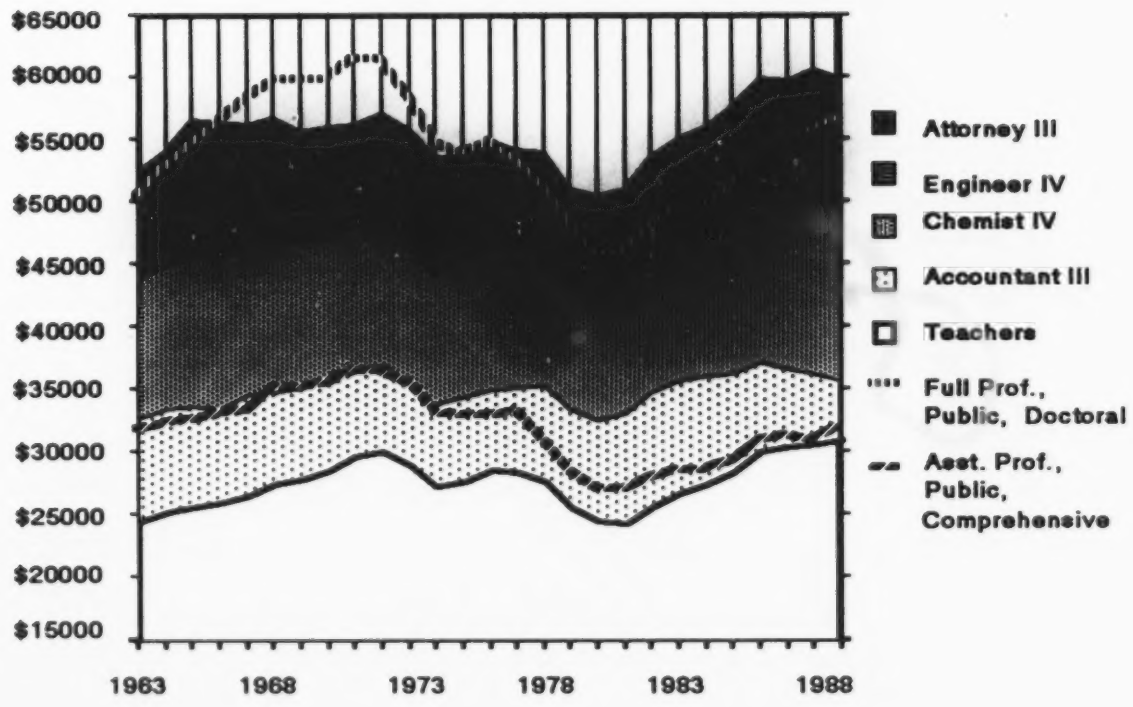


Table II–4

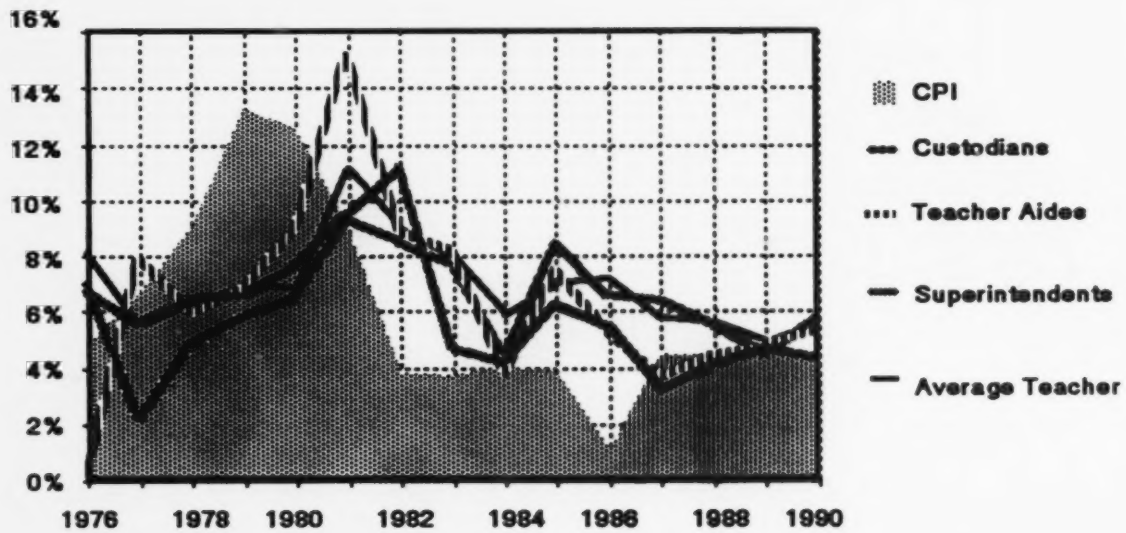
SALARIES OR EARNINGS OF NONTEACHING SCHOOL PERSONNEL, 1975–76 TO 1988–89

	1975–76	1979–80	1981–82	1983–84	1985–86	1987–88	1988–89	1989–90	1975–76 To 1989–90
Teachers–Average	$12,437	$15,913	$19,275	$22,039	$25,276	$28,230	$29,608	$31,276	$19,769
Teachers–Beginning	8,611	10,657	12,595	14,278	16,692	18,657	19,571	20,625	12,567
Superintendents	32,527	39,344	46,664	52,483	60,707	68,147	71,190	75,425	45,037
H.S. Principals	23,306	29,207	34,776	39,334	43,793	50,512	52,987	55,722	32,828
Secretaries									
Central Office	7,929	10,331	12,718	14,366	16,383	18,220	19,045	20,038	12,720
School Building	6,521	8,348	10,301	11,613	13,233	14,749	15,364	16,184	10,138
Hourly Workers									
Instructional Aides	$2.92	$3.89	$4.88	$5.48	$6.20	$6.72	$7.05	$7.43	$4.52
Custodians	3.78	4.88	5.95	6.49	7.28	7.82	8.19	8.54	5.00
Cafeteria Workers	2.83	3.78	4.57	5.09	5.76	6.23	6.56	6.77	4.16
Bus Drivers	4.04	5.21	6.26	6.89	7.72	8.31	8.78	9.21	5.46
ANNUAL PERCENT INCREASE									
Teachers–Average	8.1%	6.8%	9.0%	5.9%	7.2%	5.6%	4.9%	5.6%	171.8%
Teachers–Beginning	6.9%	5.9%	7.9%	5.5%	7.8%	5.6%	4.9%	5.4%	156.0%
Superintendents	7.0%	6.6%	8.5%	4.4%	6.6%	5.5%	4.5%	5.9%	148.2%
H.S. Principals	1.8%	6.5%	7.9%	4.6%	4.0%	5.5%	4.9%	5.2%	143.4%
Secretaries									
Central Office	8.3%	8.1%	9.9%	5.3%	6.8%	6.0%	4.5%	5.2%	173.8%
School Building	7.9%	7.4%	10.1%	5.5%	5.8%	5.8%	4.2%	5.3%	167.7%
Hourly Workers									
Instructional Aides	0.3%	9.0%	8.9%	3.8%	5.3%	4.5%	4.9%	5.4%	155.3%
Custodians	6.8%	7.7%	11.2%	4.2%	5.5%	4.1%	4.7%	4.3%	141.2%
Cafeteria Workers	8.4%	8.6%	9.6%	4.5%	6.3%	5.2%	5.3%	3.2%	159.4%
Bus Drivers	7.7%	5.7%	8.9%	5.0%	6.2%	3.1%	5.7%	4.9%	145.6%
1990 DOLLARS									
Teachers–Average	$28,165	$24,303	$26,029	$27,585	$30,148	$30,877	$30,946	$31,276	3,999
Teachers–Beginning	19,501	16,276	17,008	17,871	19,910	20,407	20,456	20,625	1,523
Superintendents	73,661	60,087	63,016	65,691	72,409	74,538	74,408	75,425	3,390
H.S. Principals	52,779	44,606	46,962	49,233	52,235	55,249	55,382	55,722	1,452
Secretaries									
Central Office	17,956	15,778	17,175	17,981	19,541	19,929	19,906	20,038	2,691
School Building	14,767	12,749	13,911	14,536	15,784	16,132	16,058	16,184	1,852
Hourly Workers									
Instructional Aides	$6.61	$5.94	$6.59	$6.86	$7.40	$7.35	$7.37	$7.43	$0.53
Custodians	8.56	7.45	8.03	8.12	8.68	8.55	8.56	8.54	0.15
Cafeteria Workers	6.41	5.77	6.17	6.37	6.87	6.81	6.86	6.77	0.58
Bus Drivers	9.15	7.96	8.45	8.62	9.21	9.09	9.18	9.21	0.32

Data Source: Educational Research Service

Figure II-7

Annual Rate of Increase in Teacher Salaries and Earnings for Selected Nonteaching Positions



III. Beginning Teacher Salaries, the Hiring of Beginning and Reentering Teachers and Teacher Retirement

Great attention has been focused on beginning teacher salaries during the 1980's. The average beginning teacher salary reported in this survey is $20,476 for 1989-90, up 5.8 percent from the previous year. The Educational Research Service, in its annual survey of school districts across the nation, reports a $20,635 figure for the average of the "lowest paid teacher," up 5.4 percent from the previous year. A wage survey by the Department of Defense of the 170 school districts serving cities with populations of more than 100,000 yielded an average beginning teacher salary of $21,395, up 5.6 percent from the previous year.

Beginning Teacher Salary by State. Nineteen states have average beginning salaries greater than 20,000. Alaska, New York, Connecticut, Hawaii, California, Washington, D.C., New Jersey, and Maryland have actual starting salaries in excess of $22,000 while only North Dakota, South Dakota, and West Virginia report average starting salaries below $16,000. As shown in Table III-1, beginning teachers in Alaska, New York, Virginia, and Vermont experienced at least 8 percent salary jumps over beginning teachers in 1988-89. The actual average beginning salary stands at 74.4 percent of the U.S. average. This ratio varied from a low of 54 percent in Rhode Island to 77 percent in Mississippi. Southern states typically have higher starting salaries relative to the average salary.

Trends in Beginning Teacher Salaries Relative to Expected Salaries of College Graduates in the Private Sector. Beginning offers in business for new college graduates in other white-collar occupations remain high compared to beginning teachers, ranging from 48 percent more for engineers to 21 percent more for liberal arts graduates in spring 1990. The earnings advantage of these white-collar occupations however, is at about the same level as in 1978. Combining the past two years, however, every occupation except engineering and computer science showed greater salary growth than beginning teachers. During 1989, accountants, sales/marketing, business administration, chemistry, economics/finance and liberal arts graduates had higher beginning salary growth than teachers. If beginning teacher salaries grow at an estimated rate of 5.5%, four occupations will make gains on teachers for 1990: sales and marketing majors (up 6.8 percent) and liberal arts graduates (up 7.8 percent), business administration (up 8.7 percent), and math or statistics (up 9.0 percent). Table III-3 contains these data, and Figure III-1 graphs the relationship between starting salaries.

Starting salaries in other white-collar occupations show less stability among each other over time than do the average salaries. Private employers tend to make labor market adjustments through the hiring of, and salaries given to, beginning employees. As in the average salary comparison, beginning salaries in other occupations gained on teacher salaries from the mid-1970's until about 1982 (except for accounting, which has shown a slow but continuous decline relative to beginning teacher salaries through 1985). Beginning teachers finally reached their highest-ever salary in exceeding 1972 levels by $170 (in 1990 dollars). During 1990, sales/marketing, liberal arts, and economics/finance join computer science and math/statistics in regaining previous purchasing power experienced in the 1970's.

New Hires Entering Teaching for the First Time. For 39 states reporting data for 1988-89, beginning teachers comprised as much as 3.5 percent of classroom teachers, as shown in Table III-3. Arkansas, Florida, Georgia, Hawaii, and Utah reported that more than 5 percent of their teachers were beginning teachers in 1988-89. For 31 states reporting data for 1989-90, beginning teachers comprised only 3.2 percent of classroom teachers. Utah again reported new teacher hiring rates exceeding 5 percent. Idaho, Kansas, Louisiana, and Washington reported increases exceeding 5 percent. Among the 33 states reporting data for both years, 14 states indicated that they hired fewer new teachers, and 18 reported hiring more new teachers. Conclusions based on these data should be strictly speculative, given that many states do not collect these data, the inconsistencies in definitions among states, and the utilization of an unweighted average.

Reentering Teachers. The definition of "reentering teacher" varies from state to state, but the figure ideally represents experienced teachers who did not teach in a public school or an out-of-state school the prior year. Reentering teachers could include reappointments after layoffs, maternity reinstatements and illness reinstatements. The data frequently include out-of-state experienced teachers and teachers from private school backgrounds, even if there is no break in service. Specific exceptions to these generalizations noted by State Departments of Education are footnoted in Table III-4.

Based on data from 26 states in 1988-89 and 21 states in 1989-90 listed in Table III-4, the number of experienced teachers reentering the classroom fell below the number of beginning teachers in both 1988-89 and 1989-90. Returning experienced teachers comprised as much as 3.3 percent (unweighted average) of classroom teachers in 1988-89 and 2.9 percent in 1989-90. Beginning teachers comprised 3.5 percent and 3.2 percent of teachers during the same two-year period. Again, conclusions based on this data should be considered very speculative.

Teacher Retirement. Approximately 32 states reported retirement figures for either 1987-88 or 1988-89, as shown in Table III-5. The average retirement rate (unweighted) was 2.2 percent and 2.3 percent for the two years, ranging from a low of

1.0 percent in South Dakota and Massachusetts to 3.9 percent in Louisiana. The number of retirements grew by more than 20 percent in a single year in Kentucky, Minnesota, South Dakota, Washington, and West Virginia. Fewer than half of the states reported a decline in the number of retirements.

Interstate comparisons should be considered strictly speculative, because most state retirement systems cannot distinguish between retirees who had been classroom teachers the previous year and all other new retirees. Other entrants could include former teachers newly eligible to draw retirement benefits and nonteaching professional personnel including administrators. Some teachers are eligible to draw retirement benefits in two or more states.

TABLE III-1

ACTUAL AVERAGE BEGINNING BA TEACHER SALARIES, 1988-89 AND 1989-80

	State	Beginning Salary 1989-90	Average Salary 1989-90	Beginning To Average Salary Ratio	Beginning Salary 1988-89	Increase in: Beginning Salary	Increase in: Average Salary
1	Alaska	$29,763	$43,097	69.1%	$27,310	9.0%	3.2%
2	New York	25,000 c	38,925 c	64.2%	23,000	8.7%	6.2%
3	Connecticut	23,783	40,768	58.3%	22,276	6.8%	8.3%
4	Hawaii	23,381	32,252	72.5%	21,561	8.4%	8.1%
5	D.C.	22,983	39,850 b	57.7%	21,479	7.0%	7.0%
6	California	22,780 b	37,625 b	60.5%	21,491	6.0%	6.0%
7	New Jersey	22,500	35,676	63.1%	21,500	4.7%	8.0%
8	Maryland	22,172	36,481 a	60.8%	20,756	6.8%	6.8%
9	Florida	21,586 b	28,787	75.0%	20,314	6.3%	6.7%
10	Michigan	21,575 b	36,427	59.2%	20,150 b	7.1%	6.7%
11	Pennsylvania	21,350 b	33,435	63.9%	19,750 b	8.1%	7.0%
12	Virginia	21,217	30,926	68.6%	19,500	8.8%	6.7%
13	Minnesota	21,157	32,190 a	65.7%	20,152	5.0%	5.0%
14	Arizona	21,100 b	29,402	71.8%	20,300 b	3.9%	3.2%
15	Massachusetts	20,295	34,175	59.4%	19,783	2.6%	6.1%
16	Delaware	20,123	33,377	60.3%	19,008	5.9%	5.7%
17	Texas	20,000 b	27,400 b	73.0%	19,100 b	4.7%	3.3%
18	Nevada	20,000 b	30,587	65.4%	18,800 b	6.4%	6.1%
19	Wisconsin	20,000	32,600 b	61.3%	19,235	4.0%	5.0%
20	Missouri	19,851	27,229	72.9%	18,541	7.1%	4.7%
21	Indiana	19,847 a	30,978 a	64.1%	18,437	7.6%	5.6%
22	Tennessee	19,800 b	27,052	73.2%	18,600 b	6.5%	5.6%
23	Illinois	19,667	32,917 ae	59.7%	18,621	5.6%	5.7%
24	Rhode Island	19,635	36,057 h	54.5%	18,417	6.6%	5.3%
25	Oregon	19,418 g	30,842 g	63.0%	18,915	2.7%	5.0%
26	Alabama	19,364	25,500	75.9%	18,930	2.3%	1.2%
27	Kansas	19,348 bf	27,220 bf	71.1%	18,362	5.4%	5.0%
28	Colorado	19,234	30,758	62.5%	18,650	3.1%	4.1%
29	Wyoming	19,200 b	28,991	66.2%	19,000	1.1%	2.1%
30	Iowa	19,145	26,747	71.6%	18,999	0.8%	3.8%
31	North Carolina	19,140	27,814	68.8%	18,330	4.4%	8.5%
32	New Hampshire	19,126	28,986	66.0%	17,416	9.8%	8.5%
33	South Carolina	19,039	26,638	71.5%	18,025	5.6%	5.8%
34	Washington	18,965 a	30,475 a	62.2%	18,148	4.5%	4.4%
35	Georgia	18,892 b	28,013	67.4%	17,823	6.0%	4.1%
36	New Mexico	18,795	25,302	74.3%	18,027	4.3%	5.0%
37	Mississippi	18,750 b	24,365	77.0%	17,500 b	7.1%	7.9%
38	Vermont	17,970	28,849 a	62.3%	16,576	8.4%	6.4%
39	Montana	17,750 b	25,081	70.8%	17,200 b	3.2%	2.7%
40	Ohio	17,721	30,567	58.0%	17,041	4.0%	4.8%
41	Nebraska	17,690	25,522	69.3%	16,519	7.1%	7.1%
42	Kentucky	17,530	26,275	66.7%	16,672	5.1%	5.4%
43	Oklahoma	16,900 b	23,944	70.6%	16,500 b	2.4%	1.8%
44	Arkansas	16,673 a	22,471 a	74.2%	16,444	1.4%	2.4%
45	Maine	16,599	26,881 e	61.7%	15,814	5.0%	7.8%
46	Louisiana	16,544	24,300	68.1%	15,648	5.7%	8.1%
47	Idaho	16,214	23,861	68.0%	15,252	6.3%	5.0%
48	Utah	16,040	23,652 a	67.8%	15,409	4.1%	3.5%
49	North Dakota	15,882	23,016	69.0%	15,318	3.7%	3.4%
50	South Dakota	15,820	21,300	74.3%	15,354	3.0%	3.8%
51	West Virginia	15,778	22,842	69.1%	15,055	4.8%	4.3%
	U.S. Average	$20,476	$31,315	65.4%	$19,350	5.8%	5.7%
	Guam	19,217	25,842	74.4%	19,217	0.0%	0.0%
	Virgin Islands	19,081	28,000	68.1%	18,000	6.0%	5.4%

a=estimate or preliminary; b=AFT estimate; c=median; d=excludes state-paid health insurance; e=includes extra duty and extracurricular pay; f=estimated to exclude fringes; g=includes 6% pension pick-up; h=based on total gross salary.

TABLE III–2

BEGINNING TEACHER SALARIES AND EXPECTED SALARIES OF COLLEGE GRADUATES TO BE HIRED

	1972	1974	1976	1978	1980	1982	1984	1986	1988	1989	1990
Teaching	$6,970	$8,058	$9,085	$10,062	$11,676	$13,539	$15,482	$17,667	$19,571	$20,635	$21,770 *
Engineering	10,608	11,556	13,980	16,680	20,136	25,128	26,844	28,512	29,820	30,600	32,304
Accounting	10,356	11,040	12,396	13,464	15,720	18,876	20,172	21,216	24,324	26,568	27,408
Sales/Marketing	8,904	9,864	11,316	12,636	15,936	18,072	19,620	20,688	22,848	25,572	27,828
Business Admin.	8,568	9,000	10,224	12,048	14,100	17,940	19,416	21,324	22,920	24,372	26,496
Liberal Arts	8,328	8,892	10,020	11,400	13,296	16,956	19,344	21,060	22,596	24,348	26,244
Chemistry	9,840	10,200	11,928	14,700	17,124	21,552	24,192	24,264	25,692	28,488	29,088
Math or Statistics	9,276	10,680	12,384	13,632	17,604	20,892	22,416	23,976	26,112	26,340	28,944
Economics/Finance	9,240	10,176	10,644	12,072	14,472	18,564	20,484	22,284	23,136	25,332	26,712
Computer Science		9,672		14,160	17,712	22,068	24,864	26,172	27,372	27,756	29,100
Others	9,264	10,344	11,820	13,848	17,544	20,460	23,136	26,724	26,316	25,272	28,728

(1990 Dollars)

	1972	1974	1976	1978	1980	1982	1984	1986	1988	1989	1990
Teaching	21,611	20,459	17,554	19,585	17,828	18,280	19,374	21,068	21,402	21,529	21,770
Engineering	32,891	29,341	27,012	32,467	30,746	33,927	33,593	34,001	32,610	31,926	32,304
Accounting	32,110	28,031	23,951	26,207	24,003	25,485	25,244	25,301	26,600	27,720	27,408
Sales/Marketing	27,608	25,045	21,865	24,595	24,333	24,400	24,553	24,671	24,986	26,680	27,828
Business Admin.	26,566	22,851	19,755	23,451	21,530	24,222	24,298	25,429	25,064	25,428	26,496
Liberal Arts	25,822	22,577	19,360	22,190	20,302	22,893	24,207	25,115	24,710	25,403	26,244
Chemistry	30,510	25,898	23,047	28,613	26,147	29,098	30,274	28,936	28,096	29,723	29,088
Math or Statistics	28,761	27,117	23,928	26,534	26,880	28,207	28,052	28,592	28,555	27,482	28,944
Economics/Finance	28,649	25,837	20,566	23,498	22,098	25,064	25,634	26,574	25,301	26,430	26,712
Computer Science	0	24,557	0	27,562	27,045	29,795	31,115	31,211	29,933	28,959	29,100
Others	28,724	26,263	22,838	26,954	26,789	27,624	28,953	31,869	28,778	26,367	28,728

* Estimated to be a 5.5 percent increase; ERS estimate of beginning teacher salary is used to maintain continuity of longitudinal data base.

(Table III–2 Continued)

RATIO OF EXPECTED SALARIES OF COLLEGE GRADUATES TO BE HIRED TO BEGINNING TEACHERS SALARIES

	1972	1974	1976	1978	1980	1982	1984	1986	1988	1989	1990
Teaching	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Engineering	1.52	1.43	1.54	1.66	1.72	1.86	1.73	1.61	1.52	1.48	1.48
Accounting	1.49	1.37	1.36	1.34	1.35	1.39	1.30	1.20	1.24	1.29	1.26
Sales/Marketing	1.28	1.22	1.25	1.26	1.36	1.33	1.27	1.17	1.17	1.24	1.28
Business Admin.	1.23	1.12	1.13	1.20	1.21	1.33	1.25	1.21	1.17	1.18	1.22
Liberal Arts	1.19	1.10	1.10	1.13	1.14	1.25	1.25	1.19	1.15	1.18	1.21
Chemistry	1.41	1.27	1.31	1.46	1.47	1.59	1.56	1.37	1.31	1.38	1.34
Math or Statistics	1.33	1.33	1.36	1.35	1.51	1.54	1.45	1.36	1.33	1.28	1.33
Economics/Finance	1.33	1.26	1.17	1.20	1.24	1.37	1.32	1.26	1.18	1.23	1.23
Computer Science		1.20		1.41	1.52	1.63	1.61	1.48	1.40	1.35	1.34
Others	1.33	1.28	1.30	1.38	1.50	1.51	1.49	1.51	1.34	1.22	1.32

ANNUAL PERCENT INCREASE IN BEGINNING TEACHER SALARIES AND EXPECTED SALARIES OF COLLEGE GRADUATES

	1974	1976	1978	1980	1982	1984	1986	1988	1989	1990
Teaching	7.0%	5.5%	5.7%	9.6%	7.5%	8.4%	5.8%	4.9%	5.4%	5.5%
Engineering	6.4%	9.7%	11.9%	10.1%	12.3%	4.0%	6.1%	3.1%	2.6%	5.6%
Accounting	2.0%	4.3%	5.2%	6.6%	11.2%	3.6%	2.9%	8.0%	9.2%	3.2%
Sales/Marketing	2.2%	9.4%	7.7%	21.7%	4.9%	5.2%	0.3%	12.9%	11.9%	8.8%
Business Admin.	3.9%	4.7%	13.2%	4.7%	10.7%	4.6%	7.2%	4.3%	6.3%	8.7%
Liberal Arts	2.3%	7.6%	9.7%	4.3%	10.3%	5.9%	11.9%	10.2%	7.8%	7.8%
Chemistry	0.8%	7.1%	10.6%	8.3%	10.3%	8.3%	0.2%	-5.0%	10.9%	2.1%
Math or Statistics	11.8%	4.0%	8.7%	21.7%	12.3%	3.3%	5.6%	2.2%	0.9%	9.9%
Economics/Finance	7.3%	-3.1%	6.7%	10.7%	10.0%	3.8%	6.3%	5.2%	9.5%	5.4%
Computer Science				14.8%	8.4%	7.1%	8.3%	4.2%	1.4%	4.8%
Others	6.7%	13.0%	11.8%	20.5%	2.2%	9.4%	21.6%	19.9%	-4.0%	13.7%

Figure III-1

Trends in Beginning Salaries for College Graduates in Selected Occupations

(1990 Dollars)

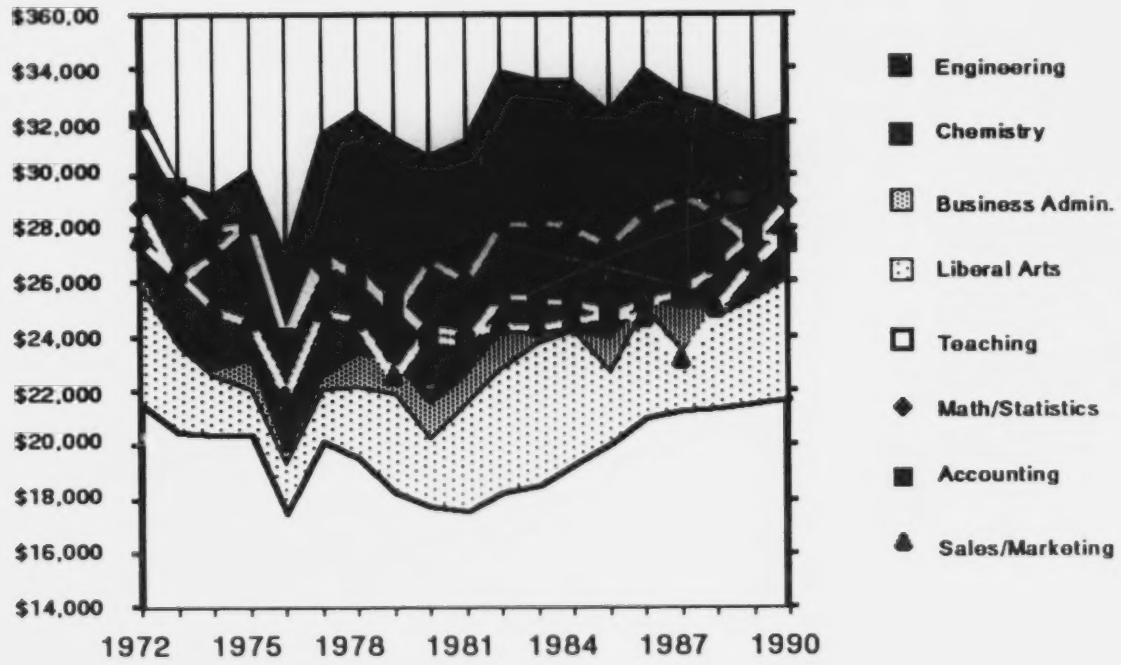


TABLE III-3

NEW HIRES ENTERING TEACHING FOR THE FIRST TIME FOR STATES REPORTING DATA

State	Beginning Teachers 1988-89	Beginning Teachers 1989-90	Percent Change	Percent of Classroom Teachers 1988-89	Percent of Classroom Teachers 1989-90
Alabama	1,734	1,852	6.8%	4.4%	4.7%
Arkansas	1,611	1,252	-22.3%	5.9%	4.5%
Colorado	958 b			3.1%	
Connecticut	1,403 c	1,105 c	-21.2%	3.6%	2.9%
Delaware	86			1.5%	
D.C.	205	156	-23.9%	3.2%	2.6%
Florida	5710 b			5.7%	
Georgia	3,061	3,245		4.0%	
Hawaii	541	338	-37.5%	6.0%	3.4%
Idaho	510	704	38.0%	4.9%	6.6%
Illinois	2,839	3,254	14.6%	2.7%	3.1%
Indiana	929	865	-6.9%	1.7%	1.6%
Iowa	717 b			2.3%	
Kansas	1,630	1,745	7.1%	5.8%	6.1%
Kentucky	1,465	1,296	-11.5%	4.1%	3.6%
Louisiana	2,562 d	2,503 d	-2.3%	5.9%	5.7%
Maine	419	407	-2.9%	2.9%	2.7%
Maryland	1,288	1,400	8.7%	3.2%	3.4%
Michigan	2,110 d	2,089 d	-1.0%	2.3%	2.3%
Minnesota	1,482	1,554	4.9%	3.5%	3.6%
Missouri	1,876	1,839	-2.0%	3.7%	3.6%
Nebraska	820	858	4.6%	4.7%	4.8%
New Jersey	1,118	1,076	-3.8%	1.4%	1.4%
New Mexico	574	812	41.5%	3.6%	5.0%
New York	5,652 d	5,008 d	-11.4%	3.2%	2.8%
North Carolina	1,415			2.3%	0.0%
North Dakota	192	182	-5.2%	2.5%	2.3%
Ohio	2,322 d	2,384 d	2.7%	2.3%	2.3%
Oregon	840	931	10.8%	3.3%	3.6%
Pennsylvania	2,680 e	2,796 e	4.3%	2.6%	2.7%
South Carolina	800 af	900 af	12.5%	2.2%	2.5%
South Dakota	409	364	-11.0%	5.0%	4.4%
Tennessee	1,541			3.5%	0.0%
Texas	10,000 b			5.1%	0.0%
Utah	1,015	949	-6.5%	5.7%	5.1%
Virginia	2,109	1,777	-15.7%	3.2%	2.6%
Washington	809	1,131	39.8%	2.1%	2.8%
West Virginia	797	1,240	55.5%	3.6%	5.7%
Wisconsin	880	1,000	13.6%	1.8%	2.0%
Unweighted Average	1,721	1,469	2.6%	3.5%	3.2%
Guam	119	148	24.4%	7.9%	8.9%
Virgin Islands	59			3.7%	

a=Estimate or preliminary.
b=From previous survey.
c=Teachers with no in-state teaching experience.
d=All new with no prior teaching experience.
e=Students receiving instructional certificate for first time and teaching in state.
f=Teachers under age 27 credited with zero years of teaching experience.

TABLE III–4

EXPERIENCED TEACHERS REENTERING TEACHING FOR STATES REPORTING DATA

State	Reentering Teachers 1988–89	Reentering Teachers 1989–90	Percent Increase	Percent of Classroom Teachers 1988–89	Percent of Classroom Teachers 1989–90	Percent of New Hires* 1988–89	Percent of New Hires* 1989–90
Alabama	280 b	267 b	-4.6%	0.7%	0.7%	13.9%	12.6%
Arkansas	1,085 c	547 c	-49.6%	4.0%	2.0%		
Connecticut	1,344 d	1,168 d	-13.1%	3.5%	3.0%	94.0%	100.0%
Delaware	69			1.2%			
D.C.	232	165	-28.9%	3.6%	2.7%	3.9%	100.0%
Florida	3,485			3.5%		51.9%	
Georgia	3,183 d			4.2%		62.5%	
Hawaii	60	39 e	-35.0%	0.7%	0.4%	10.5%	5.2%
Illinois	4,714 f	3,999 f	-15.2%	4.5%	3.8%	83.5%	82.2%
Indiana	1,188	1,034 a	-13.0%	2.2%	1.9%	62.4%	100.0%
Kansas	530	433	-18.3%	1.9%	1.5%	26.6%	25.0%
Kentucky	1,927	1,863	-3.3%	5.4%	5.2%	42.9%	42.7%
Maryland	563	600	6.6%	1.4%	1.4%	100.0%	100.0%
Minnesota	794 g	794 g	0.0%	1.9%	1.8%	100.0%	100.0%
Missouri	1,609	1,600	-0.6%	3.2%	3.1%	100.0%	100.0%
New Jersey	3,122	2,786	-10.8%	3.9%	3.5%	84.5%	77.4%
New Mexico	306 d	398 d	30.1%	1.9%	2.5%	5.1%	7.4%
New York	13,527 h	13,748 h	1.6%	7.8%	7.8%	90.5%	
North Carolina	4,176 f			6.8%		95.6%	
North Dakota	564 i	546 i	-3.2%	7.3%	7.0%	19.5%	18.6%
Ohio	3,374 j	2,615 j	-22.5%	3.3%	2.6%		100.0%
South Carolina	2,600 ak	2,400 ak	-7.7%	7.2%	6.7%		
South Dakota	171	179	4.7%	2.1%	2.2%	10.0%	100.0%
Tennessee	1,592			3.7%		13.7%	
Washington	706	1,184 m	67.7%	1.8%	2.9%	47.0%	48.9%
West Virginia	195	306	56.6%	0.9%	1.4%	18.1%	23.4%
Wisconsin	333	328	-1.5%	0.7%	0.7%		
Unweighted Ave	1,916	ERR	-2.7%	3.3%	2.9%	51.6%	63.5%
Guam	129	153	18.6%	8.5%	9.2%		

a=Estimate or preliminary.
b=All new teachers minus first year teachers with a B.S. degree.
c=Did not teach last year, but has taught in public schools.
d=Returning with in-state public school experience.
e=Count through Septe,ber 1989.
f=Includes out-of-state and private school transfers.
g=Does not include transfers from other states.
h=May include out-of-state and private school transfers.
i=Does not include transfers from other states or private schools.
j=New to district and not employed the previous year.
k=Newly hired teachers over age 26 or with any kind of previous teaching experience.
m=Reporting method change in 1989-90 (no details given).

Table III–5

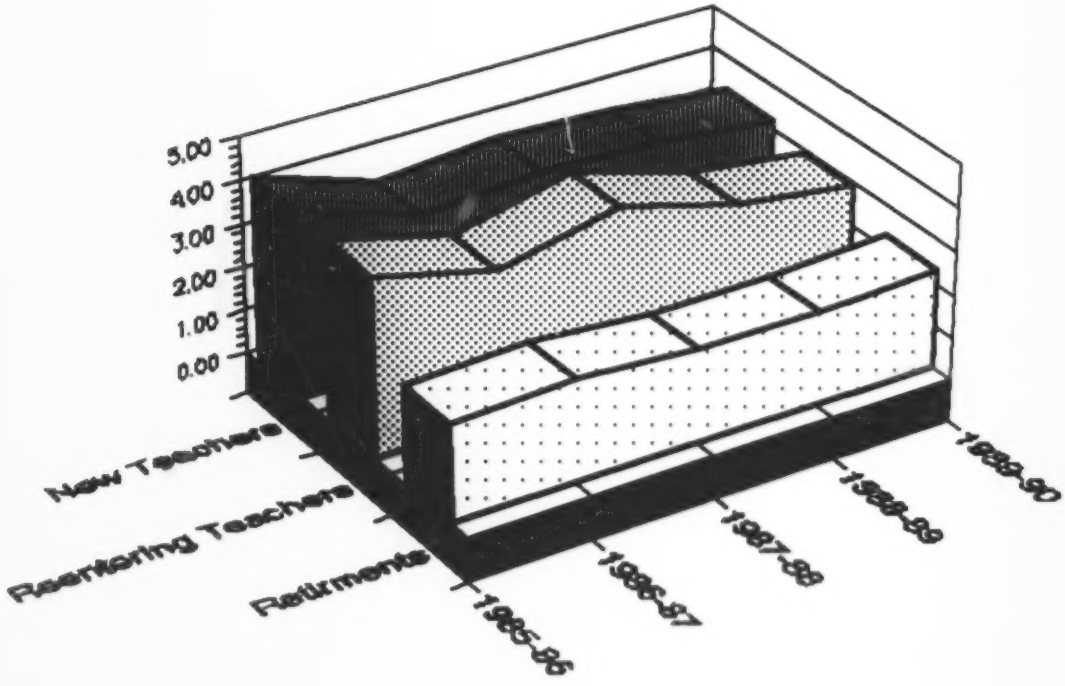
TEACHER RETIREMENT RATE FOR STATES REPORTING DATA

State	Retiring Teachers 1987–88	Retiring Teachers 1988–89	Percent Increase	Percent of Classroom Teachers* 1987–88	Percent of Classroom Teachers* 1988–89
Alabama	1,030 b			2.6%	
Arkansas	1,003 c	584	-41.8%	3.7%	2.1%
Connecticut	687	711	3.5%	1.8%	1.8%
Delaware	151 b			2.6%	
D.C.	132	70	-47.0%	2.1%	1.2%
Florida	1,274	1,318	3.5%	1.3%	1.3%
Georgia	1,908	2,261	18.5%	3.2%	3.6%
Hawaii	482	570	18.3%	5.3%	5.7%
Idaho	194	226	16.5%	1.9%	2.1%
Illinois	1,373	1,299	-5.4%	1.3%	1.2%
Kansas	414	388	-6.3%	1.5%	1.4%
Kentucky	661	976	47.7%	1.8%	2.7%
Louisiana	1,700 a	1,800 a	5.9%	3.9%	4.1%
Maine	190	200 a	5.3%	1.3%	1.3%
Maryland	494			1.2%	
Massachusetts	614	735	19.7%	1.0%	1.2%
Minnesota	549	864	57.4%	1.3%	2.0%
Nebraska	488 d	442 d	-9.4%	2.8%	2.5%
New Jersey	1,069	1,231	15.2%	1.3%	1.5%
New Mexico	263	282	7.2%	1.7%	1.7%
New York	5,698	5,376	-5.7%	3.3%	3.1%
North Carolina	1,017			1.6%	
North Dakota	202	88	-56.4%	2.6%	1.1%
Ohio	3,183	2,428	-23.7%	3.2%	2.4%
Oregon	605	582	-3.8%	2.4%	2.3%
Pennsylvania	1,529	1,719	12.4%	1.5%	1.6%
South Dakota	82	152	85.4%	1.0%	1.9%
Tennessee	532			1.2%	
Vermont	124	122	-1.6%	2.0%	2.4%
Washington	1,037 d	1,268 d	22.3%	2.7%	3.1%
West Virginia	752	1,375 c	83.0%	3.4%	6.4%
Wisconsin	735	825	12.2%	1.5%	1.7%
Unweighted Average	943	1,033	8.6%	2.2%	2.3%

a=Preliminary or estimate.
b=From previous survey.
c=Eearly retirement provisions stimulated retirement.
d=Includes all persones, active and inactive, who paid into the teacher retirement system.

Figure III-2

Trends In Hiring New Teachers, The Reentry of Experienced Teachers and Retirement



	1985-86	1986-87	1987-88	1988-89	1989-90
New Hires:					
No Experience	4.3%	3.4%	3.6%	3.5%	3.2%
Reentering With Experience	4.2%	3.5%	4.1%	3.3%	2.9%
Retirement Rate	2.3%	2.4%	2.2%	2.2%	2.3%

IV. International Comparisons

Public funding of Education. Public funding of education in 1986 in the United States, excluding capital outlay and debt service, comprised 5.2 percent of its Gross Domestic Product, ranking 9th among 15 industrialized countries (Table IV-1). Denmark, Canada and Sweden spent more than 7 percent of their GDP on education; and Germany ranked the lowest, spending just 4.1 percent of its GDP on education. Approximately 65 percent of public education spending is devoted to pre-K, elementary and secondary school in the United States, about the same as the 15-country average of 66.4 percent. At 3.7 percent of the GDP, U.S. public spending on elementary and secondary education ranks 10th among the 15 countries. Germany, the lowest effort country, contributes 3.1 percent of its GDP. Sweden and Denmark contribute at least 5.0 percent of their GDP to public spending on elementary and secondary education. At 1.5 percent of GDP, public spending on higher education in the Untied States ranks 5th among the 15 countries. Canada contributes 2.2 percent towards public spending on education followed by the Netherlands, Australia, and Denmark. Germany, France and Italy rank at the bottom.

In 1986, public spending on education in the United States was $3,328 per pupil (both public and private pupils) for all levels of education except higher education when comparisons are made on the basis of Purchasing Power Parities. As shown in Table IV-1, this figure ranks the U.S. 7th among the 15 countries behind Switzerland, Canada, Norway, Sweden, Austria, and Denmark. Compared by the ratio of per pupil spending to per capita GDP, the U.S. ranks 13th, ahead of only Japan and Germany. Compared to the U.S. ratio of .19, Austria, Switzerland and Sweden had ratios in excess of .25.

Demographic and School Structure Factors Influencing Educational Spending. Relative to its total population, the U.S. tends to have more students than most of the other industrialized countries as shown in Table IV-2. At the elementary and secondary level, the U.S. gross enrollment ratio (total enrollment divided by the high-school-age population) of 100 is well above the average of 96, but less than in Denmark, Australia, and Canada. In contrast, the gross enrollment ratio is less than 90 in Italy, Austria and Germany. With a gross enrollment ratio of 57 in higher education, the U.S. is about the same as Canada but well ahead of 3rd place Sweden at 37 and the 15-nation average of 32. Public spending on higher education as a percent of GDP, however, ranked only 5th among the 15 countries. The surprisingly low ranking reflects the huge private expenditure levels on higher education in the U.S. including tuition paid by students.

With a total fertility rate of 1.85 compared to the 15-country average of 1.65, the U.S. ranks second behind Australia. While the U.S. ranks 5th according to the percentage of the population enrolled aged 6 to 11, Canada, France, the U.S. Italy, and Norway have 8.3 to 8.4 percent of their population in this age group. Australia and Japan have about 9 percent, while Germany has less than 6 percent. The small school-aged cohort and a low enrollment ratio in secondary education explain the low public spending levels on education in Germany.

At the elementary or primary level, U.S. schools averaged 373 pupils per school, well above the 15-nation average of 181 and second only to the Japanese average size of 444 pupils. The U.S. number may be slightly inflated since grades 1 through 8 are classified as elementary schools, while in the other countries primary grades generally include only the first four to six grades. Because of the small school size in European countries, school principals usually teach, thus keeping administration costs down. With about 11 percent of its elementary and secondary students in private schools, the U.S. has the fifth highest private school enrollment rate. While Belgium and the Netherlands have more than half of their students in private schools, these schools are heavily subsidized by public funds.

Teacher Salaries. Among nine countries with comparable teacher salary data, only the United Kingdom, Sweden and Japan pay less than the U.S. when Purchasing Power Parities are used as the basis of currency conversion. These data are shown in Table IV-3. Ranked by the ratio of teachers' salary to per capita GDP, the U.S. ranks second to last. Compared to the average manufacturing worker, teachers are paid less in the U.S. than in any other country except Sweden.

Budget Allocations For Teacher Salaries. A little more than half of the U.S. education dollar goes toward classroom teachers, compared to an average of about 70 percent for the 10 countries listed in Table IV-4. Non-teaching personnel get less than 20 percent of all compensation costs in the ten countries shown, while non-teaching personnel get about 30 percent of the U.S. compensation dollar. Even though the data are inexact, Table IV-4 shows that none of the countries that appear to have believable and comparable data--Austria, Canada, Finland, New Zealand, Switzerland, the United Kingdom, and Turkey--come close to U.S. expenditures on non-teaching personnel.

The UNESCO data show that only about 5 percent of compensation goes towards administrators (professional teaching personnel without teaching responsibilities) compared to the 15 percent for non-teaching professionals in the U.S. Data on non-professional employee compensation exist only for Austria, Canada and New Zealand. Again, the U.S. appears to be on the high side, but not too much different than Canada and Finland.

Technical Considerations. When making international comparisons, small

differences should be ignored due to data comparability problems. Generally, all international spending comparisons are of public spending on both public and private education, not "total spending on education," "spending on public education," or "public spending on public education." The international comparisons in OECD and UNESCO data as well as those in the Statistical Abstract of the United States and the Digest of Education Statistics are made on the same basis although the UNESCO data and the U.S. statistical abstract incorrectly use the total spending figure for the the U.S., which has been in the range of 6.7 to 6.8 percent of GDP. No comparative data on private expenditures yet exist. In some countries, private schools are heavily subsidized. In U.S. higher education, public institutions receive substantial private funding, especially from tuition charges.

Japanese spending data should be considered carefully. Total public spending on education is 16.1 trillion Yen. Current educational spending for both public and private spending is 15.3 trillion Yen. Public current education expenditure is not published separately. Private and public capital outlay spending is listed as 5.1 trillion Yen--about 25 percent of all private and public spending. This level of capital spending is surely incorrect (no other country exceeds 10 percent) and clearly some kind of data comparability problem exits.

The fiscal year is the same as the calender year in most countries. In Canada and the United Kingdom, the fiscal year starts in April. In the Untied States, almost all state and local government fiscal years begin in July and the Federal fiscal years starts in October. International comparisons generally match fiscal year and school year data to the calender year in which the fiscal or school year began. This practice is not appropriate for the United States, where the overlap between the fiscal and calendar year is six months at the state and local level. Almost all of the U.S. data in this section represent the average of the two fiscal or school years.

For some comparisons it was necessary to estimate a 1986 spending level for countries where data were available only for prior years. In these cases, education spending was assumed to grow in proportion to the growth of the Gross Domestic Product. This procedure maintains education spending as a constant share of the GDP.

For comparisons necessitating the conversion of national currencies to the U.S. data the conversions were generally done with both PPP's and Exchange rates. Conversion with PPP's is preferred. The use of PPP's was pioneered by the OECD, and they are used in making inter-country comparisons. Essentially, they function as an international price index. Identical salaries based on PPP's describe an identical standard of living, even though the countries wealth and currency may vary substantially. Exchange rates are influenced by trade imbalances, restrictive trade practices, unbalanced budgets, and a variety of other "market" factors unrelated to international spending and salary comparisons.

TABLE IV-1

International Comparison Of Public Expenditures For Education

	Percent of Gross Domestic Product						Current Expenditures Per Pupil					
	Current Expenditures		Elementary and Secondary (e)		Higher Education (e)		Market Exchange Rates		Purchasing Power Parities		Ratio of Per Pupil Expenditure To Per Capita GDP	
	Percent	Rank	Percent	Rank	Percent	Rank	Dollars	Rank	Dollars	Rank	Ratio	Rank
Sweden	6.7%	3	5.4%	1	1.3%	6	4,583	2	3,840	2	0.25	4
Denmark	6.8%	1	5.0%	2	1.8%	3	4,354	3	3,544	5	0.22	8
Norway	6.0%	5	4.9%	3	1.1%	11	4,157	4	3,704	4	0.22	6
France (a)	5.6%	6	4.6%	4	1.0%	13	2,825	10	2,627	9	0.20	11
Canada	6.7%	2	4.5%	5	2.2%	1	3,303	6	3,765	3	0.26	2
Belgium (b)	5.5%	7	4.4%	6	1.1%	10	2,545	11	2,528	10	0.22	5
Austria	5.5%	8	4.2%	7	1.2%	8	3,984	5	3,535	6	0.29	1
Netherlands	6.0%	4	4.0%	8	2.0%	2	2,408	12	2,359	12	0.20	12
Switzerland	4.7%	12	3.8%	9	0.9%	14	5,626	1	4,166	1	0.20	9
United States (d)	5.2%	9	3.7%	10	1.5%	5	3,238	7	3,238	7	0.19	13
Italy (b)	4.4%	14	3.6%	11	0.8%	15	1,956	15	2,143	15	0.20	10
Japan (c)	4.8%	11	3.5%	12	1.3%	7	2,867	9	2,171	14	0.13	15
United Kingdom	4.5%	13	3.4%	13	1.2%	9	2,112	13	2,506	11	0.26	3
Australia	5.0%	10	3.3%	14	1.7%	4	1,961	14	2,264	13	0.22	7
West Germany	4.1%	15	3.1%	15	1.0%	12	3,049	8	2,670	8	0.18	14
Average (Unweighted)	5.4%		4.1%		1.3%		3,264		3,004		0.22	

Source: UNESCO Statistical Yearbook, 1988; OECD, National Accounting Systems, Main Aggregates, 1987; U.S. Bureau of the Census, Government Finance Series, GF-86 and GF-87, No.5.

Note: Generally data refer only to public expenditures on public and private education including public subsides to private education. The year refers to the calender year in which the fiscal year begins except in the United States, where the year is an average of the 1985-86 and 1986-87 school year or an average of the 1986 and 1987 fiscal years. For countries without 1986 expenditure data, education spending data were inflated by the growth rate of the Gross Domestic Product. Generally, pupil data include pre-K, Kindergarten and private school students, but exclude special education students.

a Metropolitan France.
b Ministry of Education expenditures only.
c Current expenditure data include private spending.
d Average of 1985-86 and 1986-87 data.
e "Other education" and "unallocated" expenditures, averaging 6.8% and 6.9% of expednitures respectively, were proortionately allocated to the elementary /secondary and higher education categories

Figure IV-1

Public Expenditures on Elementary and Secondary Education As a Percentage Of GDP

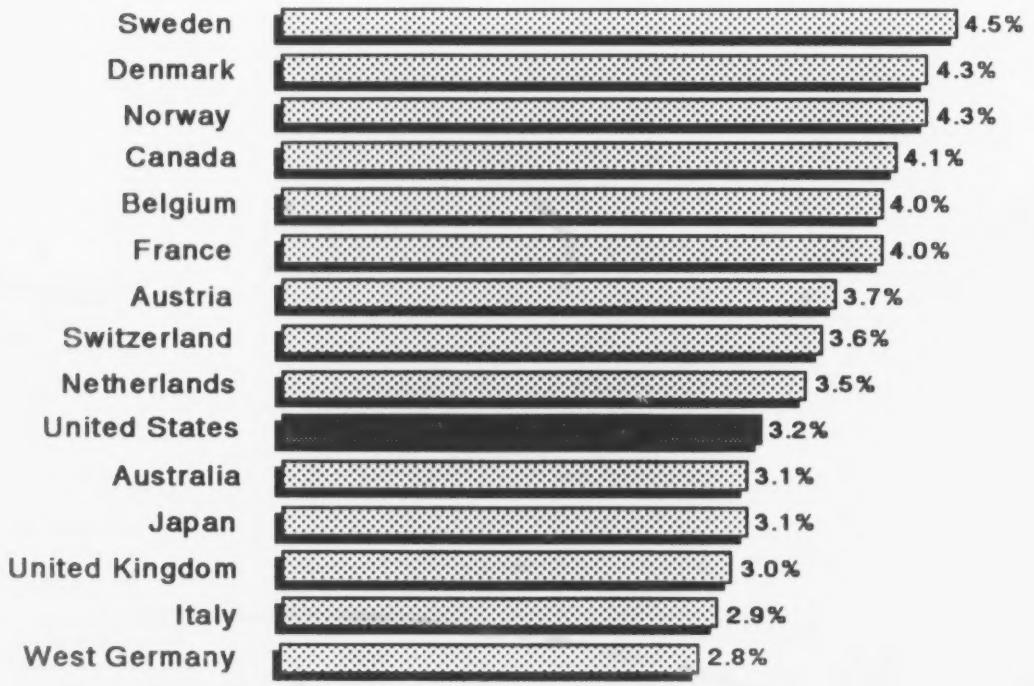


Figure IV-2

Ratio of Per Student Public Expenditures For Elementary and Secondary Education To The Per Capita Gross Domestic Product In 1987

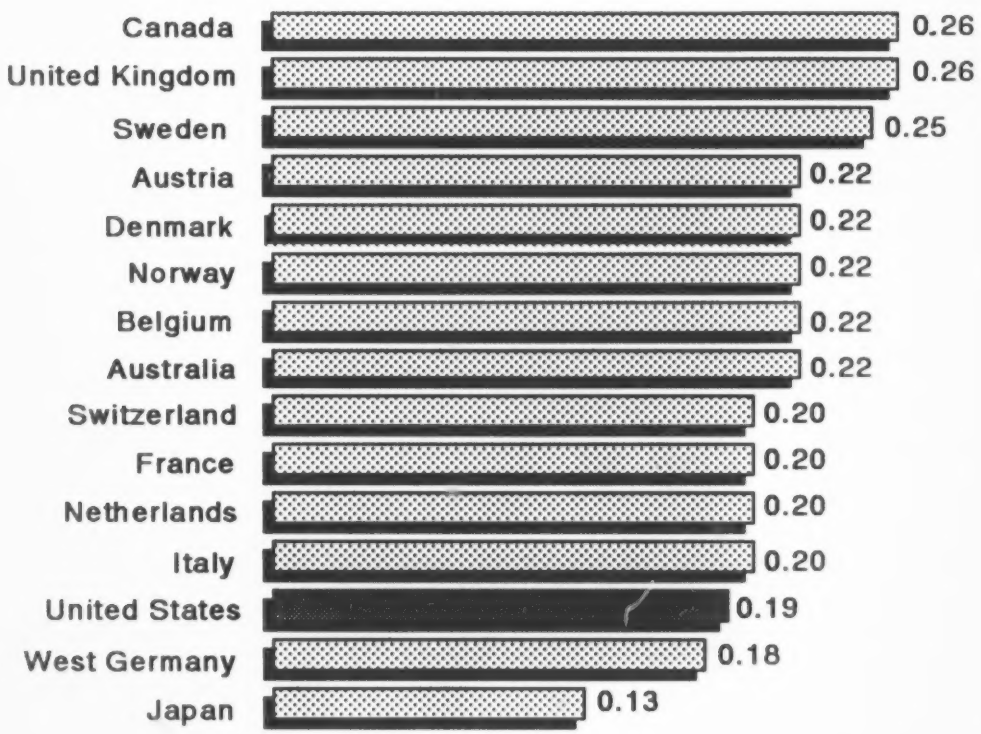


Table IV-2

Demograhic and School Structure Factors Influencing Public Spending on Education

	Demography						School Structure			
	Enrollment Ratio(a)		1988 Total Fertility Rate (b)		6-11 Percent Of Population		Pupils Per Elementary School		Percent of Elementary Students In Private Schools (1985)	
	Elem. & Sec.	Higher Educ.	Rate	Rank	Percent	Rank	Pupils	Rank	Percent	Rank
Canada	104	55	1.69	7	8.4%	3	145	9	3.2%	10
Denmark	102	29	1.51	12	7.8%	8	155	8	9.0%	6
Australia	101	28	1.92	1	9.1%	1	200	3	23.4%	3
United States	100	57	1.85	2	8.3%	5	373	2	11.4%	5
Japan	99	29	1.79	4	9.0%	2	444	1	0.5%	15
Netherlands	98	31	1.55	10	7.7%	9	175	4	68.5%	1
France	98	29	1.80	3	8.3%	4	86	14	15.1%	4
Norway	97	28			8.3%	7	96	12	0.8%	13
Belgium	95	31	1.58	8	7.6%	10	166	6	54.6%	2
United Kingdom	92	22	1.77	5	7.4%	11	173	5	4.5%	8
Sweden	90	37	1.73	6	7.3%	12	131	11	0.7%	14
Austria	85	28	1.51	11	7.1%	13	90	13	3.9%	9
West Germany	85	31	1.37	14	5.9%	15	166	7	1.6%	12
Italy	83	25	1.46	13	8.3%	6	134	10	7.7%	7
Switzerland		23	1.55	9	6.8%	14			2.2%	11
Average (Unweighted)	95	32	1.65		7.8%		181		13.8%	

Source: Enrollment ratios from UNESCO Statistical Abstract 1989; fertility rates from U.S. Bureau of the Census, Statistical Abstract, 1989; and the remainder of the data are from World Bank, Improving Primary Education in Developing Countries: A review of Policy Options, Statistical Annex, 1989.

a Net enrollment ratio uses ony the part of the enrolllent corresponding to the age group of the particular level of education. The ratios take into account the the differing systems of national education and the different duration of schooling. Higher education enrollment ratios are based on the 20-24 year old age group.

b Average number of children that would be born per women if all women lived to the end of their childbearing years, and at each year of age, they experienced the birth rates occuring in the specified year.

Table IV–3

Teacher Salaries in Selected Nations

	Average Teacher Salary				Per Capita GDP	Teacher Salary to Per Capita GDP Ratio	Average Manufacturing Workers Wage (c)	Teacher Salary to Average Worker Ratio
	Year	National Currency	U.S. Dollar (PPP Rate)	Ratio To U.S.				
Elementary								
United States	1984	21,452	21,452	1.00	15,707	1.37	22,018	0.97
United States	1982	18,801	18,801	1.00	13,424	1.40	20,486	0.92
Canada	1984	33,583	28,364	1.32	17,641	1.90	25,045	1.34
United Kingdom	1984	9,158	16,959	0.79	5,668	1.62	7,832	1.17
Germany	1982	44,540	19,026	1.01	25,923	1.72	43,930	1.01
Netherlands	1982	39,718	16,858	0.90	15,776	2.52	46,006	0.86
Sweden (a)	1984	108,504	15,759	0.73	94,674	1.15	133,549	0.81
Denmark (b)	1982	151,200	17,709	0.94	90,717	1.67	146,186	1.03
Japan (b)	1984	4,577	20,359	0.95	2,482	1.84	2,647	1.73
Secondary								
United States	1984	22,667	22,667	1.00	15,707	1.44	22,018	1.03
United States	1982	19,851	19,851	1.00	13,424	1.48	20,486	0.97
Canada	1984	37,816	31,956	1.41	17,641	2.14	25,045	1.51
United Kingdom	1984	9,575	17,731	0.78	5,668	1.69	7,832	1.22
Germany	1982	50,756	21,681	1.09	25,923	1.96	43,930	1.16
Netherlands	1982	60,061	25,493	1.28	15,776	3.81	46,006	1.31
Sweden	1984	129,456	18,803	0.83	94,674	1.37	133,549	0.97
Denmark	1982	217,700	25,498	1.28	90,717	2.40	146,186	1.49
Japan (1,000 Yen)	1984	5,037	22,406	0.99	2,482	2.03	2,647	1.90
Combined Elementary and Secondary								
United States	1984	22,019	22,019	1.00	15,707	1.40	22,018	1.00
United States	1982	19,270	19,270	1.00	13,424	1.44	20,486	0.94
Canada	1984	35,126	29,667	1.35	17,641	1.99	25,045	1.40
United Kingdom	1984	9,401	17,409	0.79	5,668	1.66	7,832	1.20
Germany	1982	49,235	21,031	1.09	25,923	1.90	43,930	1.12
Netherlands	1982	53,139	22,555	1.17	15,776	3.37	46,006	1.16
Sweden	1984	120,231	17,463	0.79	94,674	1.27	133,549	0.90
Denmark	1982	186,422	21,834	1.13	90,717	2.05	146,186	1.28
Japan	1984	4,695	20,884	0.95	2,482	1.89	2,647	1.77

Source: Steven M. Barro and Larry S. Suter, "International Comparison of Teachers' Salaries: An Exploratory Study National Center for Education Statistics, CS 88-415, July 1988

a Junior.
b Primary and Lower Secondary.
c Hourly wage rate multiplied by 220 eight-hour days.

Figure IV-3

Ratio of Elementary and Secondary Teachers Salary To the Per Capita Gross Domestic Product

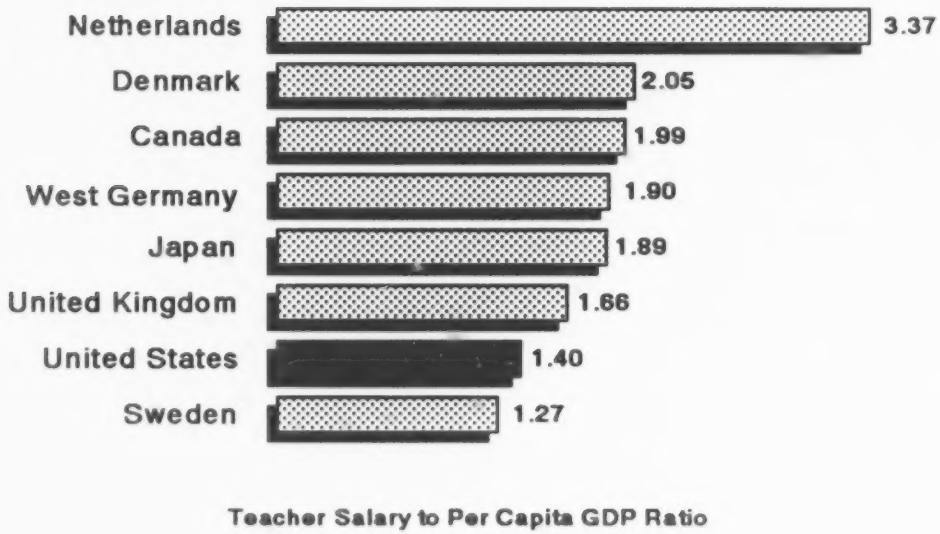


Table IV–4

Public Spending On Administration and Non–teaching Personnel In 1986

	OECD Data			UNESCO Data					
	Compemsation As A Percent of Current Expenditure		Teachers Percent Of Compensation	All Levels Percent of Compensation			Elementary and Secondary Percent of Compensation		
	Total	Teachers		Admin.	Teachers	Others	Admin.	Teachers	Others
Austria	77.0	59.8	77.7%						
Canada (a)	78.4	58.3	74.4%	8.9%	74.2%	17.0%	7.5%	78.9%	13.6%
Finland (a)	74.7	55.7	74.6%	4.0%	78.3%	17.7%	5.8%	77.0%	17.2%
Netherlands (b)	84.4	82.6	97.9%						
New Zealand	71.2	61.3	86.1%	7.5%	86.2%	6.3%	3.6%	89.6%	6.9%
Switzerland	93.5	76.9	82.2%						
United Kingdom	82.8	61.5	74.3%						
Greece	98.4	90.4	91.9%	7.2%	92.8%	na	3.8%	96.2%	na
Turkey	86.9	79.8	91.8%						
Ireland	91.3	87.6	95.9%	1.9%	96.3%	1.8%			
Norway				4.5%	95.5%	na	5.2%	94.8%	na
Average	83.86	71.39	84.7%	5.9%	85.6%	8.6%	5.2%	85.4%	9.4%
United States (Elementary and secondary education only) (c)									
	79.8	56.9	71.3%				14.5%	66.9%	18.6%

Source: OECD, Education in OECD Countries 1986-87, 1989; and UNESCO, Statistical Yearbook, 1988.

(a) Public and private spending
(b) Public expenditures on public and private education
(c) Teacher compensation is the product of the number of teachers and average salary plus benefits at 25 percent of salary
Data from the last three columns are from the Educational Research Service

APPENDIX A

STATE EDUCATION DATA, 1988–89 AND 1989–90

	State	Avg.Sal 1988–89	Avg.Sal 1989–90	Teachers 1987–88	Teachers 1988–89	$/Pupil 1987–88	$/Pupil 1988–89	$/Pupil 1989–90	Min.Sal. 1988–89	Min.Sal. 1989–90	New Teacher 1988–89(i	New Teachers 1989–90(i)	Re-entering Teachers 1988–89(j)	Re-entering Teachers 1989–90(j)	Teachers Retiring 1987–88(k)	Teachers Retiring 1988–89(k)
1	Alabama	25,190	25,500	39,409	39,700	2,567	2,717 b	2,825 b	18,930	19,364	1,734	1,852	280	267	1,030	NA
2	Alaska	41,752	43,097	6,141	6,340	7,159	7,231	7,467 b	27,310	29,763	NA	NA	NA	NA	NA	NA
3	Arizona	28,499	29,402	31,703	32,152	3,498	3,716	3,902 b	20,300 b	21,100 b	NA	NA	NA	NA	NA	NA
4	Arkansas	21,955	22,471 d	27,268	27,606	2,771	2,869 b	2,989 b	16,444	16,673	1,611	1,252	1085	547	1,003	584
5	California	35,495	37,625 b	198,521	207,277	3,876	4,100 b	4,309 c	21,491	22,780	NA	NA	NA	NA	NA	NA
6	Colorado	29,557	30,758	31,398	31,954	4,100	4,143	4,300 b	18,650	19,234	958	NA	NA	NA	NA	NA
7	Connecticut	37,659	40,768	35,502 d	35,900 d	5,905	6,832	7,415	22,276	23,783	1,403	1,105	1344	1,168	687	711
8	Delaware	31,585	33,377	5,897	5,983	4,606	4,865	5,206 b	19,008	20,123	86	NA	69	NA	151	NA
9	D.C.	37,232	39,850 b	6,394	6,674 d	5,662	6,159 c	6,424	21,479	22,983	205	156	232	165	132	70
10	Florida	26,974	28,787	100,370	104,127	3,778	4,054 c	4,378 c	20,314	21,586	5710	NA	3485	NA	1,274	1,318
11	Georgia	26,920	28,013	59,917	63,530	3,195	3,511	3,722 b	17,823	18,892	3,228	NA	900	NA	1,908	2,261
12	Hawaii	29,835	32,252	7,950 d	8,103 d	3,661	3,965 c	4,362 b	21,561	23,381	541	338	60	39	482	570
13	Idaho	22,732	23,861	10,425	10,715	2,505	2,610 b	2,741 b	15,252	16,214	510	704	NA	NA	194	226
14	Illinois	31,148	32,917 e	105,097	106,183	3,822	4,059 c	4,331 c	18,621	19,667	2,839	3,254	4714	3,999	1,373	1,299
15	Indiana	29,330	30,978 a	54,000	54,229 a	3,454	3,716 c	3,995 c	18,437	19,847	929	865	1188	1,034	NA	NA
16	Iowa	25,778	26,747	30,912	30,874	3,867	4,277 c	4,380 b	18,999	19,145	717	NA	NA	NA	NA	NA
17	Kansas	25,926 b	27,220 f	28,122	28,727	3,724	3,896 c	4,071 b	18,362	19,348	1,630	1,745	530	433	414	388
18	Kentucky	24,933	26,275	35,774	36,116	2,710	2,825 c	2,983 c	16,672	17,530	1,465	1,296	1927	1,863	661	976
19	Louisiana	22,469	24,300	43,447	44,112 a	2,886	2,957 c	3,194 b	15,648	16,544	2,562	2,503	NA	NA	1,700	1,800
20	Maine	24,938	26,881 e	14,590	14,953	3,965	4,291 c	4,832 b	15,814	16,599	419	407	NA	NA	190	200
21	Maryland	34,159	36,481 a	40,854	41,688	4,575	4,884 c	5,211 b	20,756	22,172	1,288	1,400	563	600	494	NA
22	Massachusetts	32,221	34,175	60,069	59,040	4,965	5,440	5,766 b	19,783	20,295	NA	NA	NA	NA	614	735
23	Michigan	34,128	36,427	79,847 d	84,250 d	4,350	4,537 c	5,081 b	20,150 b	21,575 b	2,110	2,089	NA	NA	NA	NA
24	Minnesota	30,661	32,190 a	42,752	43,101	4,132	4,222 c	4,463 b	20,152	21,157	1,482	1,554	794	794	549	864
25	Mississippi	22,579	24,365	27,334	27,506	2,416	2,585 b	2,728 b	17,500 b	18,750 b	NA	NA	NA	NA	NA	NA

APPENDIX A

STATE EDUCATION DATA. 1988–89 AND 1989–90

	State	Avg.Sal 1988–89	Avg.Sal 1989–90	Teachers 1987–88	Teachers 1988–89	$/Pupil 1987–88	$/Pupil 1988–89	$/Pupil 1989–90	Min.Sal. 1988–89	Min.Sal. 1989–90	New Teacher 1988–89(i	New Teachers 1989–90(i)	Re-entering Teachers 1988–89(j)	Re-entering Teachers 1989–90(j)	Teachers Retiring 1987–88(k)	Teachers Retiring 1988–89(k)
26	Missouri	26,006	27,229	50,806	51,227	3,425	3,570	3,784 b	18,541	19,851	1,876	1,839	1609	1,600	NA	NA
27	Montana	24,421	25,081	9,585	9,570	3,878	3,949 b	3,998 b	17,200 b	17,750 b	NA	NA	NA	NA	na	na
28	Nebraska	23,841	25,522	17,481	17,849	3,712	3,942 c	4,206 c	16,519	17,690	820	858	NA	NA	488	442
29	Nevada	28,836	30,587	8,699	9,175	3,298	3,583 c	3,905 b	18,800 b	20,000 b	NA	NA	NA	NA	NA	NA
30	New Hampshire	26,703	28,986	10,595	10,572	4,080	4,715	5,356 c	17,416	19,126	NA	NA	NA	NA	NA	NA
31	New Jersey	33,037	35,676	79,698	79,597	6,059	6,878 c	7,586 b	21,500	22,500	1,118	1,076	3122	2,786	1,069	1,231
32	New Mexico	24,092	25,302	15,820	16,158	3,190	3,134	3,214	18,027	18,795	574	812	306	398	263	282
33	New York	36,654	38,925 c	174,216	176,171	6,196	6,803	7,300	23,000	25,000	5,652	5,008	13527	13,748	5,698	5,376
34	North Carolina	25,646	27,814	61,790	62,974	3,153	3,310 c	3,581 c	18,330	19,140	1,415	NA	4176	NA	1,017	NA
35	North Dakota	22,249	23,016	7,709	7,751	3,239	3,201 c	3,383 b	15,318	15,882	192	182	564	546	202	88
36	Ohio	29,171	30,567	100,829	101,626	3,595	3,880 c	4,109 c	17,041	17,721	2,322	2,384	3374	2,615	3,183	2,428
37	Oklahoma	23,521	23,944	34,515	34,707 b	2,897	2,998 c	3,055 b	16,500 b	16,900 b	NA	NA	NA	NA	NA	NA
38	Oregon	29,387	30,842 g	25,147	25,631	4,266	4,506	4,731	18,915	19,418	840	931	NA	NA	605	582
39	Pennsylvania	31,248	33,435	104,379	105,415	4,603	4,951 c	5,307 b	19,750 b	21,350 b	2,680	2,796	NA	NA	1,529	1,719
40	Rhode Island	34,233	36,057 h	8,931	9,361	4,951	5,348 b	5,711 c	18,417	19,635	NA	NA	NA	NA	NA	NA
41	South Carolina	25,185	26,638	35,877	36,337	3,143	3,342 c	3,522 b	18,025	19,039	800	900	NA	NA	NA	NA
42	South Dakota	20,525	21,300	8,235	8,191	3,071	3,167	3,264	15,354	15,820	409	364	171	179	82	152
43	Tennessee	25,619	27,052	43,455	43,590	2,855	3,032 c	3,235 c	16,600 b	19,800 b	1,541	NA	1592	NA	532	na
44	Texas	26,513 a	27,400 b	196,616	199,291	3,334	3,542 c	3,772 b	19,100 b	20,000 b	10,000	NA	NA	NA	NA	NA
45	Utah	22,852	23,652 a	17,896	18,588	2,302	2,324 c	2,454 b	15,409	16,040	1,015	949	13000	NA	NA	NA
46	Vermont	27,106	28,849 a	6,852 d	6,950 d	4,927	5,197 c	5,524 c	16,576	17,970	1,029	633	NA	NA	124	122
47	Virginia	28,976	30,926	60,883 d	60,849 d	3,873	4,155 c	4,471 c	19,500	21,217	2,109	1,777	NA	NA	NA	NA
48	Washington	29,200	30,475 a	38,810	40,358	3,875	4,234 c	4,590 b	18,148	18,965	809	1,131	706	1,184	1,037	1,268
49	West Virginia	21,904	22,842	22,177	21,653	3,579	3,705 c	3,854 b	15,055	15,778	797	1,240	195	306	752	1,375
50	Wisconsin	31,046	32,600 b	48,541	49,329	4,296	4,563 c	4,868 c	19,235	20,000	880	1,000	333	328	735	825
51	Wyoming	28,400	28,991	6,693 d	6,734 d	4,742	5,075	5,237 b	19,000	19,200	NA	NA	NA	NA	NA	NA
	Average/Total	29,636	31,315	2,319,928	2,360,494	3,984	4,288	4,557	19,350	20,476	3.5%	3.2%	3.3%	2.9%	2.2%	2.3
	Guam	25,842	25,842	1,514	1,655	NA	NA	NA	19,217	19,217	119	148	129	153	129	153
	Virgin Islands	26,572	28,000	1,599	1,600	3984	4661	4,814 a	18,000	19,081	59	NA	NA	NA	18	NA

a=estimate or preliminary
b=AFT estimate
c=median
d=U.S. Department of Education data
e=includes extra duty and extracurricular pay
f=estimated to exclude fringes
g=includes 6% pension pick-up
h=based on total gross salary
i=See Table III–3 for qualifications and explanations of data
j=See Table III–4 for qualifications and explanations of data
k=See Table III–5 for qualifications and explanations of data

APPENDIX B

Data Sources

All data comes from the annual AFT Survey of State Departments of Education, except as noted below.

Table I-4

U.S. Department of Labor, Employment and Wages, Annual Averages 1988, November, 1989.

U.S. Department of Labor, Employment and Earnings, May 1990. (Used to estimate private sector annual earnings for 1989.)

U.S. Department of Labor, Employment and Wages, Annual Averages 1981, November 1982.

Table I-5

U.S. Bureau of Economic Analysis, Survey of Current Business, April, 1990.

Table I-6

Technical documentation for the AFT cost-of-living index is available from the AFT Research Department. The methodology supporting the AFT index is in: Walter W. McMahon and Carroll Melton, "Measuring Cost of Living Variation," Industrial Relations, Vol. 17, No. 3, p.331.

Table I-7

U.S. Department of Education, "Public School Revenues and Current Expenditures For Fiscal Year 1988 Final Tabulations," E.D. TABS, March 1990.

U.S. Department of Education, "Key Statistics for Public Elementary and Secondary Education: School Year 1989-90," Survey Report, December 1989.

Table II-1

U.S. Bureau of Economic Analysis, The National Income and Product Accounts of the United States 1929-82 and July issues of Survey of Current Business.

U.S. Bureau of the Census, Historical Statistics, Colonial Times to 1970, series

D739-764 and D893-904.

National Center of Educational Statistics, Digest of Education Statistics, various issues (used to estimate teacher salaries prior to the 1977-78 school year).

U.S. Department of Labor, "CPI Detailed Report," April 1990.

U.S. Department of Labor, recent issues of Current Wage Developments, (used to estimate average annual earnings for 1988).

Blue Chip Economic Indicators, May 10, 1990.

Table II-2

National Center for Educational Statistics, Digest of Education Statistics, various issues (used to estimate teacher salaries prior to the 1977-78 school year).

U.S. Bureau of the Census, Current Population Reports, series P-60.

Table II-3

U.S. Department of Labor, Handbook of Labor Statistics, June, 1985.

U.S. Department of Labor, National Survey of Professional, Administrative, Technical and Clerical Pay, March 1989, October 1989.

American Association of University Professors, data derived from the Annual Reports on the "Economic Status of the Profession," published in Academe. (Various years, usually the March-April issues).

Table II-4

Educational Research Service, Salaries Paid Professional Personnel in Public Schools, and Wages and Salaries Paid Support Personnel in Public Schools, ERS: Reston, VA, editions since 1973-74.

Table III-2

Victor Lindquist, The Northwestern Endicott Report, Northwestern University: Evanston, IL, editions since 1973.

Table IV-1

UNESCO Statistical Yearbook, 1988, 1989.

OECD, National Accounting Systems, Main Aggregates, 1987, 1989.

U.S. Bureau of the Census, Government Finance Series, GF-86 and GF-87, No. 5.

U.S. Department of Education, Digest of Education Statistics, 1988.

Table IV-2

Enrollment ratios from UNESCO Statistical Yearbook, 1988; fertility rates from U.S. Bureau of the Census, Statistical Abstract, 1989; and the remainder of the data are from World Bank, Improving Primary Education in Developing Countries: A Review of Policy Options, Statistical Annex, 1989.

Table IV-3

Steven M. Barro and Larry Suter, "International Comparisons of Teachers' Salaries: An Exploratory Study", National Center for Education Statistics, CS 88-415, July, 1988.

OECD, National Accounting Systems, Main Aggregates, 1987.

Table IV-4

UNESCO, Statistical Yearbook, 1988.

OECD, Education in OECD Countries, 1986-87, 1989.

ADDITIONAL COPIES CAN
BE PURCHASED FOR $10.00 FROM

American Federation
Of Teachers AFL CIO

555 NEW JERSEY AVENUE, NW
WASHINGTON, DC 20001